Approved according to 1776-2/FEA 209 544

Trouble-shooting instruction

GH 688/GA 628

Standard electrical repairs

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1 Conditions

1.1 Component classes.

All the components in the phone are divided into classes and after every component in the troubleshooting guide you have a class written. The components are divided into four classes: A, B, C and D.The class of the component depends on how much of the phone's performance is affected when replacing it.

Class A and B: A test call towards the "real" net (not only towards a GSM test instrument) and run it through the normal tests is enough to verify the functionality since the performance of the phone is only slightly affected.

Class C: Since the tolerances of the component are so great it can substantially affect the performance of the phone **you need to calibrate it at station level** after replacing the component.

Class D: Class D components **need to be calibrated** at **board level** using very advanced equipment and may therefore **not be replaced**.

1.2 Abbreviations.

A: The power module at some phones.

B: Crystal.

C: Capacitor.

D: Digital circuit.

F: Over voltage protection.

G: VCO.

H: Buzzer, LED, pads for display.

J: Connector.

L: Coil.

N: Analogue circuit.

R: Resistor.

S: Keyboard pads.

U: BALUN. A circuit that converts a signal from balanced to unbalanced or the opposite.

V: Transistor or diode.

X: Contact surface at the circuit board.

Z: Filter.

AGND: Ground for analogue signals.

DCIO: DC voltage used for charging the battery through the system connector.

DCON: Logical signal from the processor that keeps the phone running after you've released the On/Off key.

EXTAUD: Input signal at the system connector that the processor uses to determine if there's any external audio equipment attached.

EXTAUDI: The same signal as the EXTAUD signal but at the processor side.

GND: Ground.

LED3K: Logical signal used to activate the background illumination.

ONSRQ: Voltage from the On/Off key that starts the phone.

PORTHF: Input signal at the system connector that the processor uses to determine if there's any handsfree equipment attached.

PHF1: The same signal as PORTHF but at the processor side.

REGON: Logical signal that activates the voltage regulators.

RTC: Real time clock. The clock that keeps track of time and date.

SIMCLK: Clock signal from the processor used for communications with the SIM.

SIMDAT: Data signal from the processor used for communications with the SIM.

SIMRST: Reset signal from the processor used for communications with the SIM.

SIMVCC: Feed voltage for the SIM.

SWDC: Switched VBATT.

VANA: DC voltage for the analogue part of the logic (N800).

VBATT: Battery voltage.

VDIG: DC voltage for the processor and memory.

VDSP: DC voltage for the DSP (Digital Signal Processor).

VLCD: DC voltage for the display that controls the contrast.

VRAD: DC voltage for the radio part except the synthesizer.

VRPAD: DC voltage for the radio part in D600 (also used for the top diode and the buzzer).

VRTC: DC voltage for the real time clock.

VSIMPAD: VDIG voltage that has been switched up to 5V used for SIM.

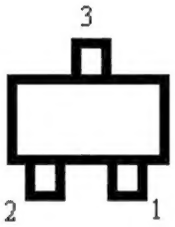
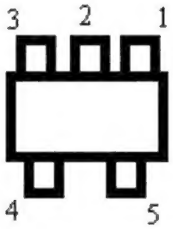
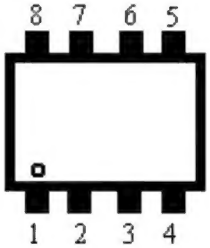
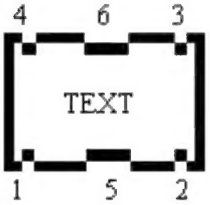
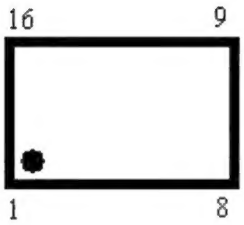
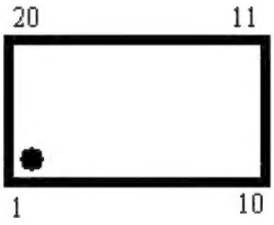
VVCO: DC voltage for the synthesizer.

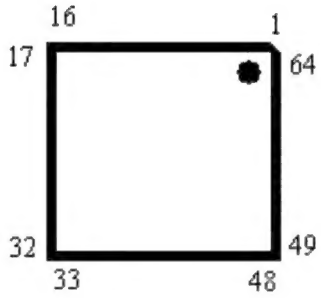
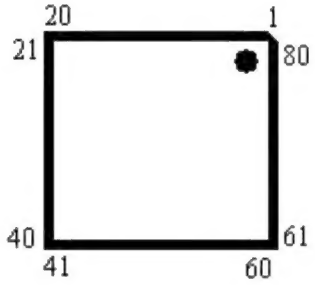
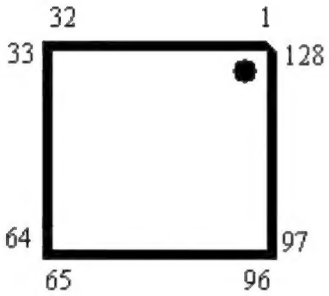
I2C: Two line serial communications standard using one clock and one data line.

LO: Local oscillator.

PWM: Pulse width modulation.

1.3 Pin placements

Single diode (PIN diode).	Electrolytic capacitor.	
		
Double diode or single transtor.	Five pin circuit (usually voltage regulator).	Double transistor.
		
Eight pin circuit.	VCO circuit	Crystal
		
Sixteen pin circuit	Twenty pin circuit	

	
N800	D900
	
D600	
D620	D610

2 No serv or can´t place a call.

2.1 Find out if the problem is Tx- or Rx-related.

Connect the phone (with signaling program) to a GSM instrument and try to get serv at –68.5dBm signal strength.

- If the phone gets serv proceed to section 2.2.
- If it doesn't get serv it's probably a problem located in the LO-part or the losses in the signal path are too great.

Open the phone and check for liquid damage.

The component side of the board is shown in fig. 2.1.

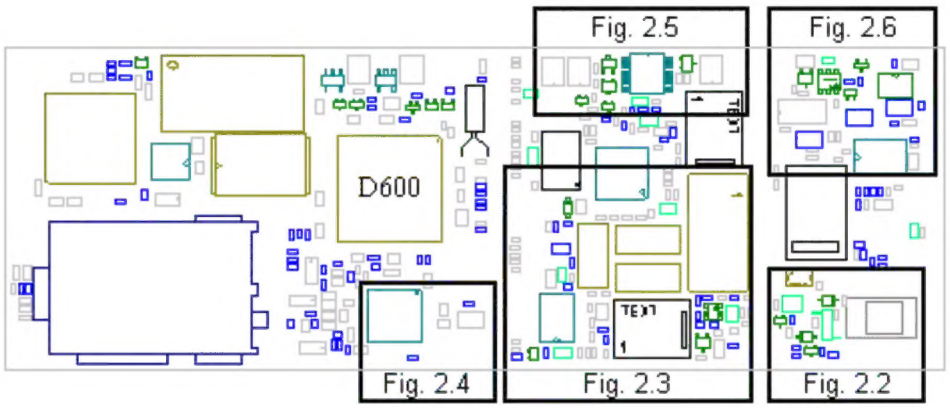


Fig. 2.1

Check the antenna connector, X401 (class A, fig. 2.2), and make sure that it isn't damaged or dirty (glue, varnish, oxide…) and that the solderings aren't faulty.

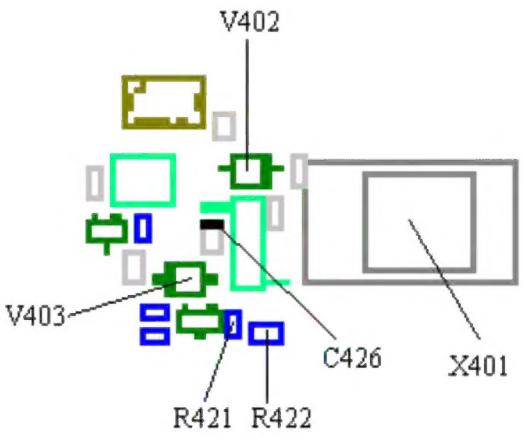


Fig. 2.2

Look for faulty solderings at G350 and C359 (fig. 2.3).

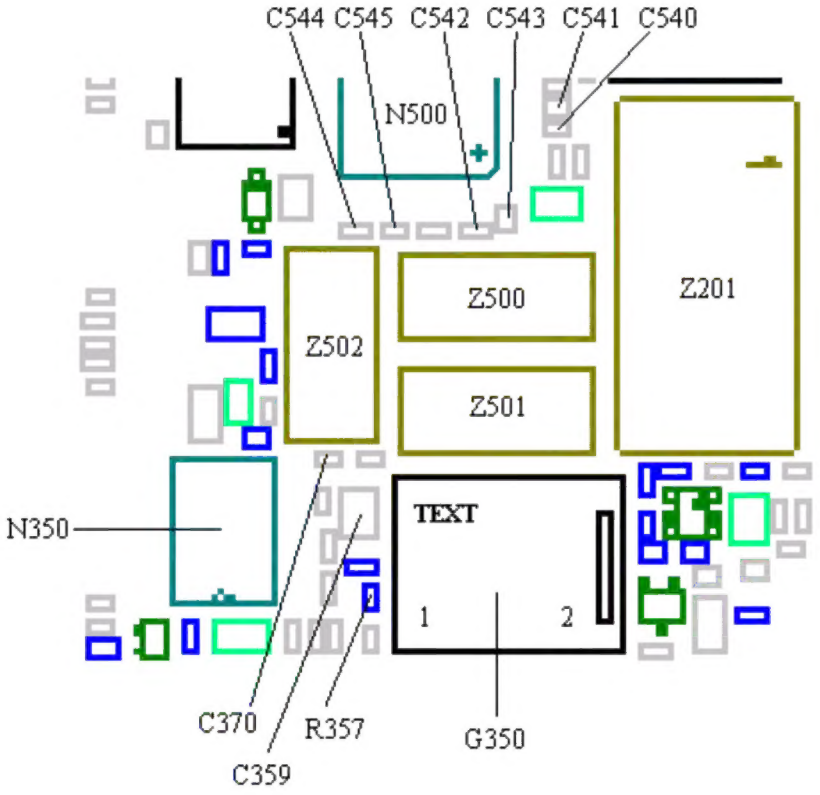


Fig. 2.3

Measure the resistance of C853 (class B, >100 kohms, fig. 2.4).

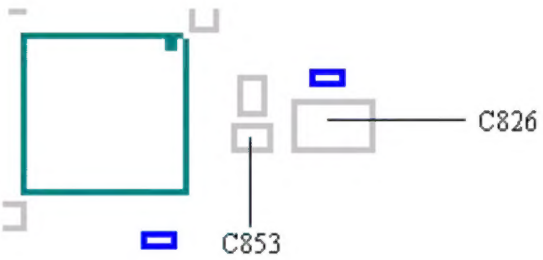


Fig. 2.4

Give the board power and start it up.

Measure VVCO (~3.8V) at V451 pad 3 and VRAD (~3.8V) at C457 (fig. 2.5).

- If any of the voltages are incorrect, proceed to chapter 3 (“Doesn´t start”-fault).

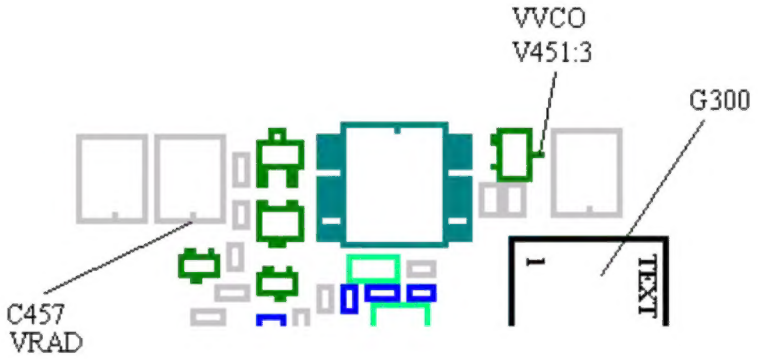


Fig. 2.5

Measure the DC voltage at pin 1 and 2 of G350. The voltage at pin 1 (control voltage) should always vary between ~0.8V - ~2.8V (usually starts at ~1.7V). The voltage at pin 2 (feed voltage) also varies but usually starts at ~3.3V (fig. 2.3).

- If the feed voltage is incorrect (usually no voltage at all), check the soldering at D600 pin 102 (fig. 2.1).

  * If the soldering isn't faulty, send the phone to the next level.

- If the control voltage is incorrect (usually ~0V or ~3.6V), check if C370 (class B) and R357 (class B) are mounted (both of them in fig. 2.3).

  * If that is the case, replace N350 (class B, fig. 2.3).

    * If that doesn't help, replace G350 (class B, fig. 2.3).

Measure the resistance of C540, C541, C542, C543, C544 and C545 (all of them class B, >200 kohms, fig. 2.3)

Check the solderings at C826 (fig. 2.4), Z201, Z500, Z501 and Z502 (fig. 2.3).

If the problem isn't solved, send the phone to the next level.

2.2 Connect a call at powerlevel 5 using an instrument with –68.5dBm signal strength.

- If it works, proceed to section 2.3.
- If it doesn't work, open the phone and check for liquid damage. Make sure the ground foil around the antenna connector isn't dirty.

Check the antenna connector, X401 (class A, fig. 2.2), and make sure that it isn't damaged or dirty (glue, varnish, oxide…) and that the solderings aren't faulty.

Replace the back cover and try again.

- If it doesn't work it most likely means that the problem is Tx-related.

Check if C300, C403, L300, V300, V301 or V302 (all class A, fig. 2.6) are burnt.

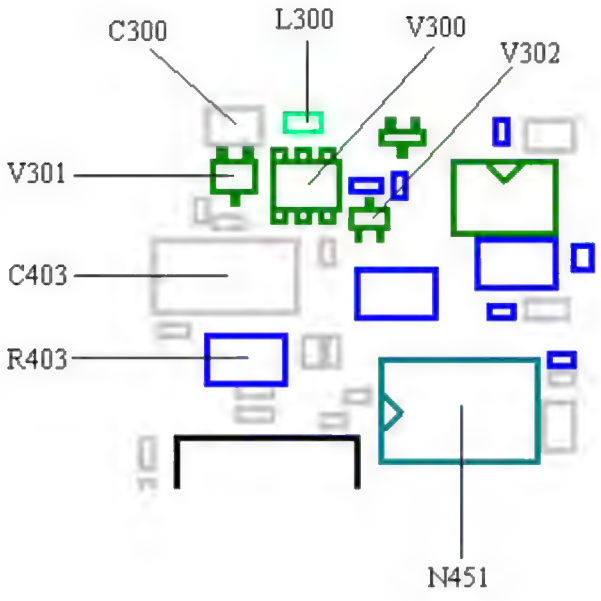


Fig. 2.6

Check soldering at G300 (fig. 2.5).

Measure the resistance of C853 (class B, >100 kohms, fig. 2.4).

Measure the resistance of R403 (class B, <1 ohms, fig. 2.6).

Measure the resistance of L300 (class A, <1 ohms, fig. 2.6).

If the problem isn't solved, send the phone to the next level.

2.3 Read the Rx-level and output power values from the instrument while the call is still connected.

- If the Rx-level value is at 40 - 46 steps, check that the output power is 31-35dBm.

  * If it is correct it means that the phone probably isn't faulty. Lower the signal strength at the instrument to –102dBm and make sure that the Rx-level value is 6-12 steps and that the Rx-quality value is 0-2 steps.

    * Try running the phone through the test again.

      * If the phone passes the test but doesn't manage to connect a call at the "real" net, make sure that it isn't because it is stolen. If it isn't, replace D600 (class B, fig. 2.1).

      * If you get one of these error messages; **"phase and frequency error", "burst timing", "power level 5-19", "Rx-quality"** or **"Rx-level"** that differs slightly from the default values, try replacing the

back cover and run the phone through the test again. This applies especially for the GA 628.

- If the output power is too low or the Rx-quality value is too high, send the phone to the next level.
- If the Rx-level value is too high, the phone has to be calibrated and therefore you have to send the phone to the next level.
- If the Rx-level value is below 40 steps at –68.5dBm signal strength or below 6 steps at –102dBm signal strength, the problem is Rx-related.

Open the phone and check for liquid damage.

Check the antenna connector, X401 (class A, fig. 2.2), and make sure that it isn't damaged or dirty (glue, varnish, oxide…) and that the solderings aren't faulty.

Measure the resistance from C426 (fig. 2.2, measure from the marked side) to ground (>1 Mohms). The resistance is usually only a few ohms when Z200 (class B, fig. 2.7) is broken.

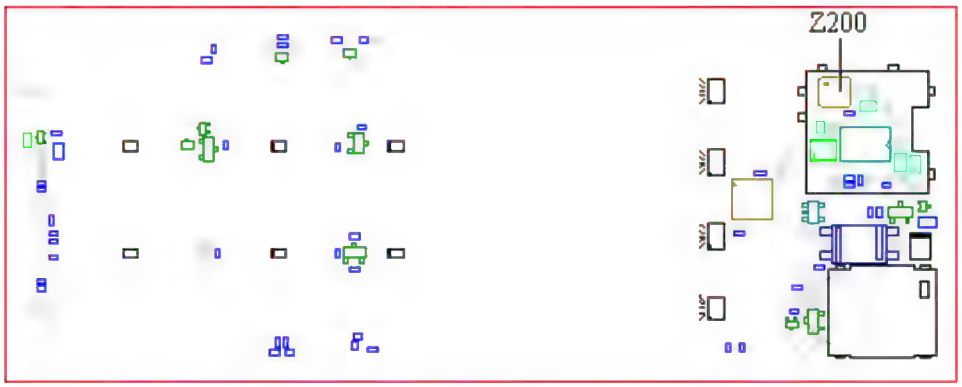


Fig. 2.7

Measure the resistance from the anode of V403 (class B, fig. 2.2) to ground (~60 kohms).

- If it's less (a few kohms), lift one of the V402 pins from the pad and measure again at the same place.

  If it's correct (~60 kohms), replace V402.

- If the resistance is still too low, replace both diodes.

Measure again after replacing the component(s).

- If the resistance is still too low, measure the resistance of R421 and R422 (both of class B, 100 kohms, fig. 2.2). Both the resistors are 100 kohms but when you measure them the instrument will show ~60 kohms.

Check the solderings at C826 (fig. 2.4), Z201, Z500, Z501 and Z502 (fig. 2.3).

Measure the resistance of C540, C541, C542, C543, C544 and C545 (all of them class B, >200 kohms, fig. 2.3)

If the problem isn't solved, send the phone to the next level.

3 Doesn't start.

3.1 Find out if the phone will start by using the On/Off-button.

Insert a fully charged battery and press the On/Off-button.

- If the phone doesn't start, proceed to section 3.2
- If the phone starts, check the charging function by connecting a charger at the system connector.

  If the phone doesn't charge, proceed to chapter 6 ("Charging"-fault).

  If the phone starts (lights the background illumination, asks for SIM/PIN, seeks the net…) and charges it's probably not faulty or the problem is intermittent.

Open the phone and make a visual examination of the circuit board.

The component side of the board is shown in fig. 3.1.

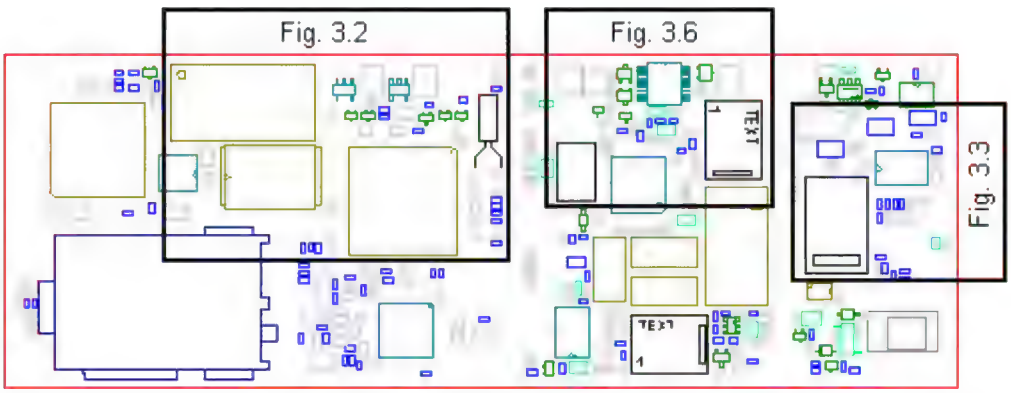
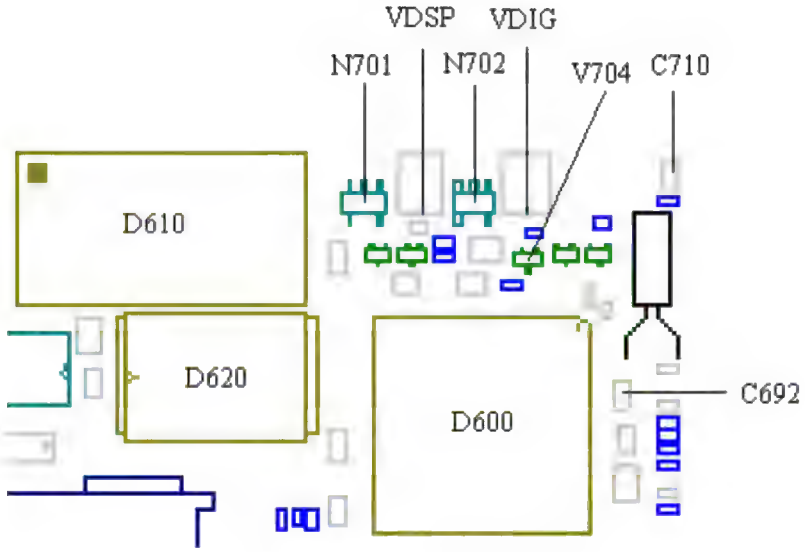


Fig. 3.1

Check for liquid damages anywhere at the board. Also check for burnt or damaged pads at the system connector and faulty soldering at, for instance, D600, D610 and D620 (fig. 3.2).

GH688



GA 628

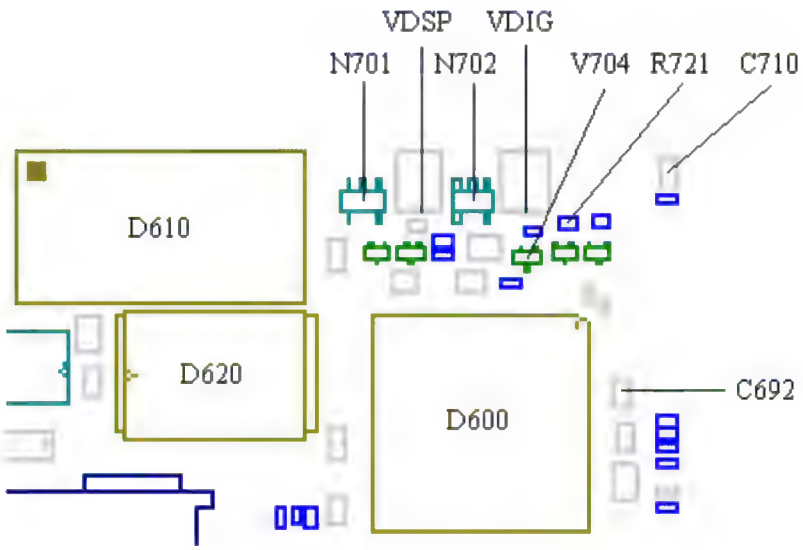


Fig. 3.2

As soon as the problem is solved, send the phone through the flow as usual.

3.2 Visual check.

Make a visual check. Make sure that the battery screws are intact and properly mounted, that the isolator sleeve (GH 688) is properly mounted, that the volume keys aren't stuck and that the system connector isn't dirty or liquid damaged. Continue at 3.3.

3.3 Current consumption with On/off-key pressed.

Insert a dummy battery.

- If the phone consumes current immediately it usually means that C403 (class A, fig. 3.3) is faulty but first you should make sure that the frame gasket isn't in contact with the positive battery connector pad at the circuit board (fig. 3.4).

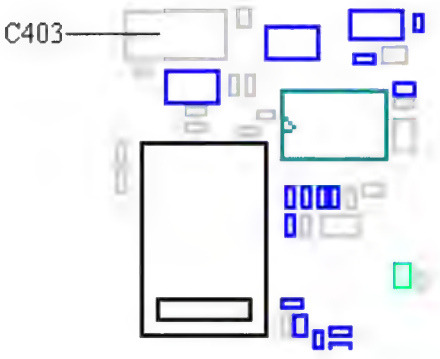


Fig. 3.3

Fig. 3.4

Start the phone using the On/Off-key and check the current consumption.

- If the phone **doesn't consume any current at all** when the On/Off-key is pressed it is most likely liquid damaged. Open the phone and check this. Also check that the keyboard and the keyboard pads are functional and clean.
- If the phone consumes more **than 200mA**, remove the display elastomer and try again.

  * If the consumption is reduced it was probably the elastomer or the display.

  * If the consumption is just as high as before, proceed to section 3.4.3.

- If the phone consumes ~60mA (average, varies), the battery indicator blinks once or twice and then the phone turns itself off, then it's probably X820 (the pads to the volume flex film, fig. 3.5) or the volume flex film (J820) that is shorted out. Replace the flex film and if that doesn't work, proceed to section 3.2.

  * If the same phenomena arises without the On/Off-key being pressed it means that V704 is broken (fig. 3.2).

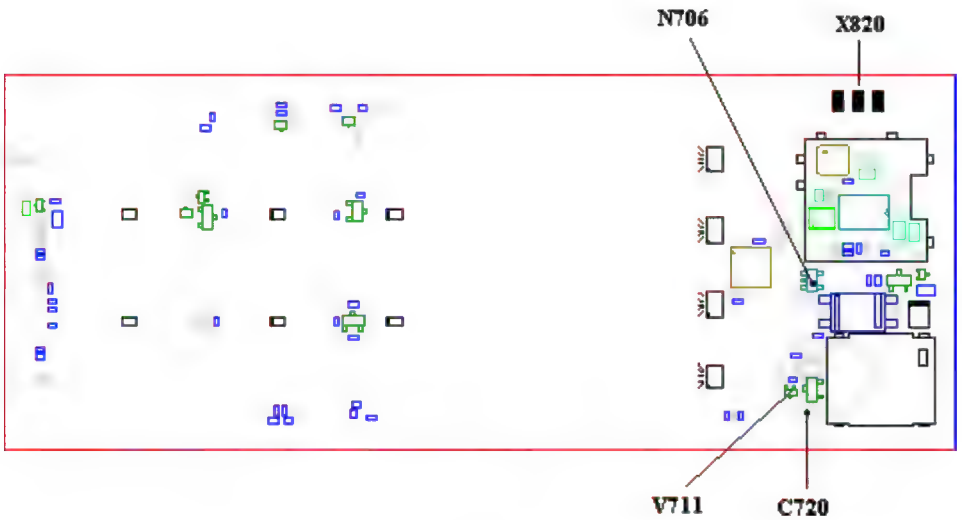


Fig. 3.5

- If the phone consumes **1-200mA**, starts (asks for SIM/searches for the net…etc…) and works as long as you keep the On/Off-key pressed, proceed to section 3.4.4.
- If the phone doesn't start, try to program it in the flash programmer.

  * If it doesn't start in the flash programmer, proceed to section 3.4.1

  * If you are able to program the phone in the flash programmer but it doesn't start afterwards or if it is troublesome when trying to program it, proceed to section 3.4.2.

  * If the phone starts after programming it in the flash-programmer then the problem is probably solved, but to eliminate intermittent errors check the circuit board for liquid damage or faulty solderings on D600, D610 and D620 (fig. 3.2).

3.4 Measuring at a powered circuit board.

3.4.1 Doesn't start in the flash programmer.

Open the phone and check for liquid damage.

Make sure the system connector pads aren't burnt.

Place the board in the fixture. Start it up and keep it running by keeping DCIO high.

Check VDIG and VDSP voltages (~3.2 V, fig. 3.2).

- If any of the voltages are too low, measure the resistance to ground (VDIG > 500 ohms, VDSP > 25 kohms).

  * If the resistances are correct, replace the corresponding circuit (VDIG – N702, VDSP – N701, both of class A).

  * If the resistance is too low, send the phone to next level.

- If any of the voltages are too high, replace the corresponding circuit.

Check the power reset voltage at C710 (fig. 3.2, >3V).

- If it's lower, replace N450 (class A, fig. 3.6) and try again.

  * If it didn't work, replace C710 (class A).

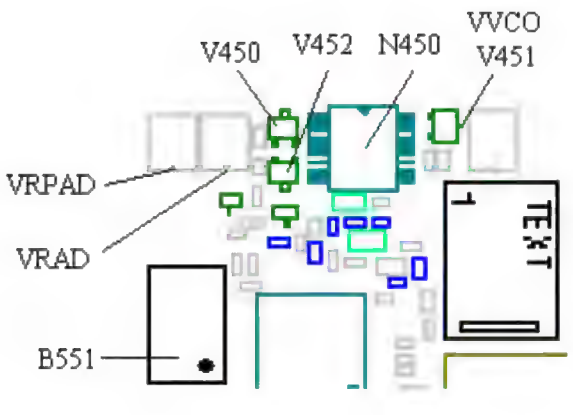


Fig. 3.6

Check VRAD, VVCO and VRPAD (~3.8V, fig. 3.6).

- If all three voltages are wrong, measure the resistance from N450 pads 8, 11, 12, 13 and 14 to ground (~0 ohms).

  * If the resistance is too high there is a foil damage and the phone is to be discarded.

  * If it is correct, replace the circuit and eventually the transistors (V452, V451 and V450, all of them class A).

- If one or two of the voltages are wrong, measure the resistance from the corresponding voltage source to ground (>50 kohms).

  * If the resistance is correct, replace the corresponding transistor.

* If that doesn't help, replace N450 (class A).

* If the resistance of any of the voltage sources is too low, send the phone to the next level.

Measure the amplitude of B551 pin 3 (class C, >1V t-t) with an oscilloscope, spectrum analyzer, frequency counter, diode probe...

- If the amplitude is too low, send the phone to the next level.

Check for bad solderings at D600, D610 and D620 (fig 3.2).

- If they look ok, replace D600 (class B).

  * If that doesn't work, first replace D610 (class A) and then D620 (class A). Try to program the phone in the flash programmer for every circuit you replace. **Don't replace any circuit if you haven't established the fact that B551 is working.**

3.4.2 Is programmable in the flash programmer but doesn't start afterwards or is troublesome in the flash programmer.

Open the phone and check for liquid damages.

Make sure the system connector pads aren't burnt.

Insert the board in the fixture. Start it up and keep it going by keeping DCIO high.

Check VDIG and VDSP (~3.2V, fig. 3.2).

- If any of the voltages are too low, measure the resistance from it to ground (VDIG >500 Ohms, VDSP >25 kohms).

  * If the resistance is correct, replace the corresponding circuit (VDIG – N702 – class A, VDSP – N701 – class A).

  * If the resistance is too low, send the phone to the next level.

- If any of the voltages are too high, replace the corresponding circuit.

Check VRAD, VVCO and VRPAD (~3.8V, fig. 3.6).

- If all the voltages are incorrect, measure the resistance from N450 pads 8, 11, 12, 13 and 14 to ground (~0 ohms).

  * If any of the resistances are too high there is a foil damage and the phone should be discarded.

  * If all the resistances are correct, replace the circuit and eventually the transistors (V450, V451, V452, all class A).

- If one or two of the voltages are incorrect, measure the resistance from the incorrect voltage(s) to ground (>50 kohms).

  * If the resistance is correct replace the corresponding transistor. If that doesn't help, replace N450 (class A).

* If the resistances from any of the voltages to ground are too low, send the phone to the next level.

Make sure that there are no faulty solderings on D600, D610 and D620.

- If the solderings look good, replace D610 (class A).

  * If that doesn't help, first replace D600 (class B) and then D620 (class A). Try to program the phone in the flash programmer for every circuit you replace.

3.4.3 Consumes more than 200mA.

Open the phone and check for liquid damage.

Make sure that the system connector pads aren't burnt.

Insert the board in the fixture. Start it up and keep it going by keeping DCIO high.

Check VDIG and VDSP (~3.2V, fig. 3.2).

- If any of the voltages are too low, measure the resistance from it to ground (VDIG >500 ohms, VDSP >25 kohms).

  * If the resistance is correct, replace the corresponding circuit (VDIG – N702 – class A, VDSP – N701 – class A).

  * If the resistance is too low, send the phone to the next level.

- If any of the voltages are too high, replace the corresponding circuit.

Check VRAD, VVCO and VRPAD (~3.8V, fig. 3.6).

- If all three voltages are incorrect, measure the resistance from N450 pads 8, 11, 12, 13 and 14 to ground (0 ohms).

  * If the resistance is too high there is a foil damage and the phone should be discarded.

  * If the resistance is correct, replace the circuit and eventually transistors (V450, V451, V452, all class A).

- If one or two of the voltages are incorrect, measure the resistance to ground (>50 kohms).

  * If the resistance is correct, replace the corresponding transistor.

    * If that doesn't help, replace N450 (class A).

  * If the resistance from any of the voltages to ground is too low, send the phone to the next level.

3.4.4 The phone works as long as the On/Off-key is pressed.

GH688

Open the phone and check for liquid damages.

Make sure the system connector pads aren't burnt.

Insert the board in the fixture. Start it up and keep it going by keeping DCIO high.

Measure the voltage at C692 (~3.1V, fig. 3.2).

- If there is voltage, check the soldering at D600 pin 119.
- If there isn't voltage, measure the resistance of C692 (class A, >200 kohms).

  * If the resistance is correct, measure the input voltage at N706 pin 2 (VBATT) and the output voltage at N706 pin 3 (~3.5V). Make sure that the regulator has ground at N706 pin 1. There is a foil damage if the ground or VBATT is missing at N706 and the phone should be discarded.

    * If the input voltage and the ground are correct, replace N706 (class A).

    * If the output voltage is correct, measure the voltage at the positive side of the backup capacitor (C720, class A, ~3.1V).

      * If there is no voltage, replace V711 (class A).

      * If there is voltage, check the resistance from the positive side of C720 (fig. 3.5) to C692 (~0 ohms).

        * If the resistance is too high there is a foil damage and the phone should be discarded.

GA 628

Open the phone and check for liquid damage.

Make sure that the system connector pads aren't burnt.

Insert the board in the fixture. Start it up and keep it going by keeping DCIO high.

Measure the voltage at C692 (~3.1V, fig. 3.2, the figure shows a GH 688 board but the capacitor is placed at the same location).

- If there is voltage, check the soldering at D600 pad 119.
- If there is no voltage, measure the resistance of C692 (class A, >200 kohms).

  * If the resistance is correct, measure VDIG.

    * If the voltage at VDIG is incorrect, see 3.4.1, 3.4.2 or 3.4.3.

    * If VDIG is correct, check the resistance from N702 pin5 (fig. 3.2) to C692 (~0 ohms).

* If the resistance is too high, measure the resistance of R721 (class A, ~0 ohms).

* If R721 is correct there is a foil damage and the phone should be discarded.

If the fault remains, send the phone to the next level.

4 Audio.

4.1 Type of fault.

Make a call from the phone that is to be tested (later called the phone) to a phone that is working correctly (later called the reference phone).

Check the function of the microphone and the earphone.

Connect a handsfree unit to the system connector of the phone.

Check the function of the phone's external connections by listening to the external speaker/earphone when talking in the reference phone and by listening to the earphone of the reference phone when talking in the external mic of the phone.

- If there is low or no sound in the earphone of the phone, proceed to section 4.2.
- If both the earphone and the handsfree speaker don't work, send the phone to the next level.
- If the sensitivity of the microphone is low (low or no sound in the reference phone), proceed to section 4.3.
- If both the microphone in the phone and the microphone of the handsfree don't work, send the phone to the next level.
- If both the microphone and the earphone don't work, proceed to section 4.4.
- If the microphone, the earphone and the handsfree don't work, send the phone to the next level.
- If the microphone of the handsfree doesn't work, proceed to section 4.5.
- If the speaker of the handsfree doesn't work, proceed to section 4.6.
- If both the microphone and the speaker of the handsfree don't work, proceed to section 4.7.
- If the phone sounds strange (the sound is distorted, scrambled, full of static or "chopped"), send the phone to the next level.

4.2 Earphone out of order.

Open the phone and check for liquid damages.

Most of the earphone faults are mechanical. Therefore you should start with replacing the front (with the earphone) to one you know works and try again.

- If the fault remains, make sure the earphone connector (J810, fig. 4.1) is intact and correctly soldered.

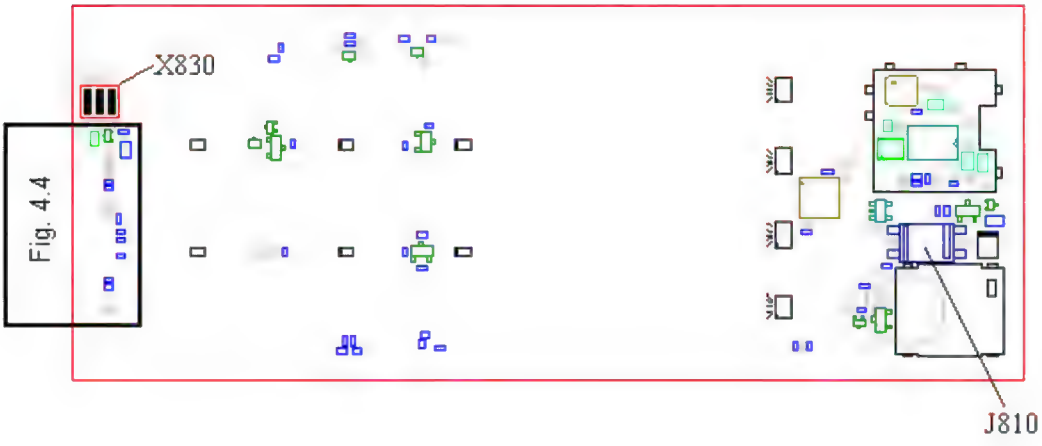


Fig. 4.1

Check the solderings of N800 (fig. 4.3).

Fig. 4.2 shows the component side of the circuit board.

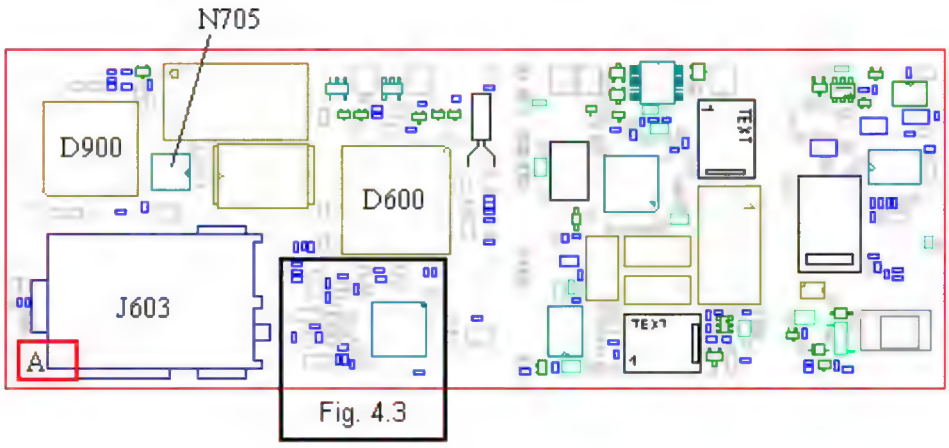


Fig. 4.2

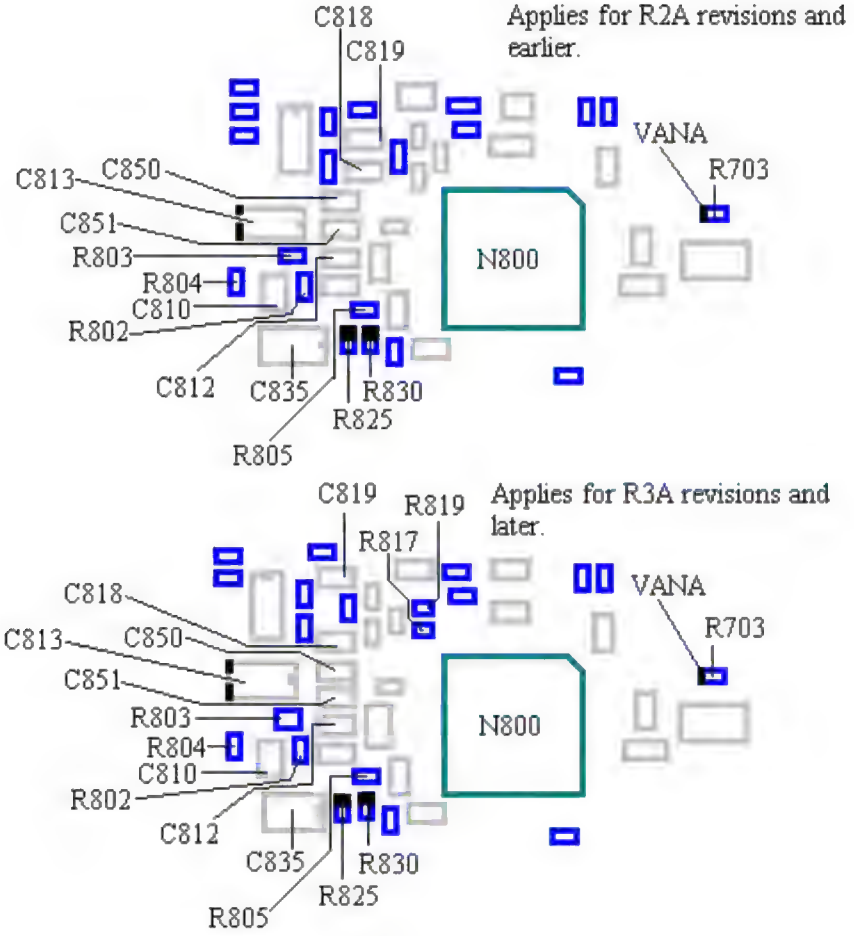


Fig. 4.3

If the fault remains, send the phone to the next level.

4.3 Microphone out of order.

Open the phone and check for liquid damages, especially around X830 (fig. 4.1) and below J603 (marked area A in fig. 4.2).

Clean the system and microphone connector pads if needed.

Most of the microphone faults are mechanical. Therefore you should start with replacing the front (with microphone) and elastomer to one you know works and try again.

If the fault remains, measure the resistances of C850 (>100 kohms), C851 (>1 kohms), R817 (~1 kohms) and R819 (~1kohms, all of class A and in fig. 4.3). Note! The resistors are mounted at boards from revision R3A and above.

Check the solderings of N800 (fig. 4.3).

Replace C818 and C819 (fig. 4.3).

If the fault still remains, send the phone to the next level.

4.4 Both the earphone and microphone out of order.

Open the phone and check for liquid damages.

Make sure there is no dirt or oxide between the components above the system connector pads (fig. 4.4 or marked area in fig. 4.5). Check very thoroughly!

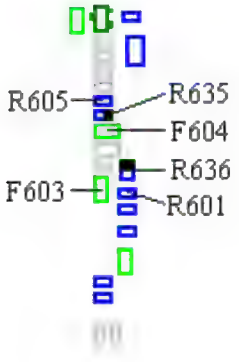


Fig. 4.4

Clean the marked surface using alcohol and a brush. Note! The dirt can be very hard to remove but it's important to wash it away.

Assemble the phone and try again as in 4.1.

If the fault remains, replace F603 and F604. It's important to clean where the components are supposed to be before mounting new ones.

Assemble the phone and try again as in 4.1.

If it still doesn't work, open the phone, give the board power and start it up by pressing the On/Off key without the system cable connected.

Measure the voltage at both sides of R601 and at D600 pin 70 (~5V, fig. 4.4 and 4.2, you follow the **PHFI** signal).

Measure the voltage at both sides of R605 and at D600 pin 67 (~5V, fig. 4.4 and 4.2, you follow the **EXTAUDI** signal).

- If the voltage is low only at one side of R601 or R605, replace the corresponding resistor (fig. 4.4, both of class A).
- If the voltage is low at both sides of R601 or R605, check the VSIMPAD voltage at the marked sides of R635 and R636 (~5V, fig. 4.4).

  * If there is no voltage, check the resistance from the marked side of R635 or R636 to N705 pin 3 (~0 ohms, fig. 4.4 and 4.2).

    * If the resistance is too high there's a foil damage and the phone is to be discarded.

    * If the resistance is correct, proceed to section 4.3.

  * If there is VSIMPAD voltage at the marked side of R635 or R636, measure the resistances of them (both are ~22 kohms and in fig. 4.4).

    * If any of the resistances are incorrect, replace the corresponding resistor.

* Measure the resistance from X602 pad 5 to ground (>100 kohms).

* If it's too low, make sure there's no dirt or oxide between the components in the marked area (fig. 4.5). Clean thoroughly and measure again.

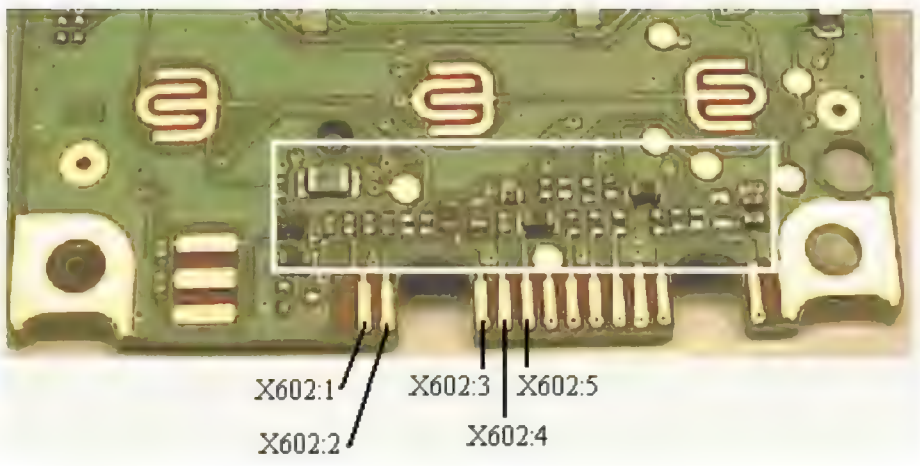


Fig. 4.5

* If the resistance still is too low, remove R601 (class A, fig. 4.4).

* If the resistance increased, replace D600 (class B, fig. 4.2) and mount a new R601.

* If the resistance didn't increase when removing R601 or it didn't help by replacing D600, send the phone to the next level.

* Measure the resistance from X602 pad 3 to ground (>100 kohms).

* If it's too low, make sure there's no dirt or oxide between the components in the marked area (fig. 4.5). Clean thoroughly and measure again.

* If the resistance still is too low, remove R605 (class A, fig. 4.4) and measure again.

* If the resistance increased, replace D600 (class B, fig. 4.2) and mount a new R605.

* If the resistance didn't increase when removing R605 or it didn't help by replacing D600, send the phone to the next level.

If all the above measured resistances are correct, but some of the voltages at R601 or R605 are low it's either caused by a slight short circuit due to dirt at the marked area in fig. 4.5, broken F603 or broken F604.

- If the voltages at R601 and R605 are correct, connect a handsfree to the system connector.
- Measure the voltages at both sides of R601 (~0V, fig. 4.4) and at D600 pin 70 (~0V, fig. 4.2).

* If the voltages aren't correct, check the soldering of D600 pin 70 (fig. 4.2).

  * If the soldering is correct, check the resistance of R601 (~1 kohms, class A).

    * If the resistance is correct, replace D600 (class B, fig. 4.2).

* If the voltages are correct, check the solderings of N800, D600 and D900 (fig. 4.3 and 4.2).

If the fault remains, send the phone to the next level.

4.5 Handsfree microphone out of order.

The fault is caused by an interruption somewhere in the audio path from the handsfree microphone (connected at the system connector) to the input at N800. The audio path is shown in fig. 4.6.

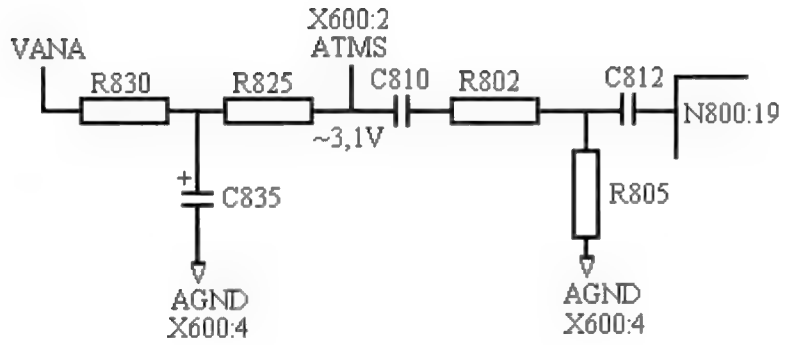


Fig. 4.6

Open the phone and check for liquid damages, especially around the system connector (X602) pads 1, 2 and 4 (fig. 4.5).

Measure the resistances of C850 (>100 kohms) and C851 (>1 kohms, both in fig. 4.3).

Make sure all the components shown in fig. 4.6 (R830, R825, R802, R805, C835, C810 and C812) are mounted at the circuit board (fig. 4.3).

Check the solderings of N800.

Give the board power and start it up by pressing the On/Off key without the system cable connected.

Measure the voltage at the marked side of R825 (~3.1V, fig. 4.3).

- If the voltage isn't there or if it is incorrect, check the VANA voltage at the marked side of R830.

* If the VANA voltage isn't correct, proceed to chapter 3 ("Doesn´t start"-fault).

* If VANA is correct, check the resistances of R830 (470 ohms), R825 (3.3 kohms) and C835 (>1 kohms, all of class A and in fig. 4.3).

- If the voltage at R825 is correct, check the resistances of C810 (>10 kohms), C812 (>100 kohms), R802 (~3.9 kohms) and R805 (~15 kohms, all four of class A and in fig. 4.3).

If the fault remains, send the phone to the next level.

4.6 Handsfree speaker out of order.

The fault is caused by an interruption somewhere in the audio path from the output of N800 to the handsfree speaker (connected at the system connector). The audio path is shown in fig. 4.7.

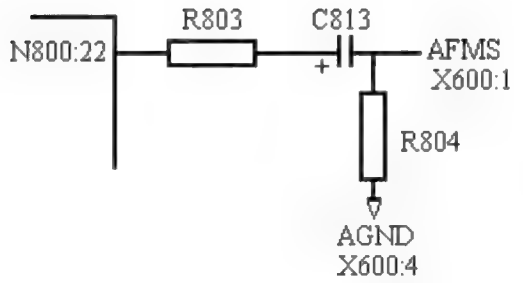


Fig. 4.7

Open the phone and check for liquid damages, especially around the system connector (X602) pads 1, 2 and 4 (fig. 4.5).

Measure the resistances of C850 (>100 kohms) and C851 (>1 kohms, both in fig. 4.3).

Make sure all the components shown in fig. 4.7 (R803, R804 and C813) are mounted at the circuit board (fig. 4.3).

Check the solderings of N800 (fig. 4.3).

Measure the resistances of R803 (~100 ohms), R804 (~100 kohms) and C813 (>100 kohms, all of class A and in fig. 4.3).

Measure the resistance from the marked side of C813 to system connector (X602) pad 1 (~0 ohms, fig. 4.5)

- If the resistance is too high there's a foil damage and the phone is to be discarded.

If the fault remains, use the schematics.

4.7 Both the microphone and the speaker of the handsfree out of order but the earphone and the microphone of the phone is working.

Open the phone and check for liquid damages, especially within the marked area above the system connector pads in fig. 4.5.

Clean the marked area using alcohol and a brush.

Measure the resistance from X602 pad 3 to the unmarked side of R635 (~0 ohms, fig. 4.4 and 4.5).

Measure the resistance from X602 pad 5 to the unmarked side of R636 (~0 ohms, fig. 4.4 and 4.5).

- If any of the resistances are too high there's a foil damage and the phone is to be discarded.

Measure the resistances of R601 and R605 (both are 1 kohms, of class A and in fig. 4.4).

If all the resistances are correct, check the solderings of N800 and D600 (fig. 4.3 and 4.2).

If the fault remains, send the phone to the next level.

5 Display.

5.1 Kind of fault.

Insert a fully charged battery and start it up using the On/Off-key.

- If it doesn't start, proceed to chapter 3 ("Doesn´t start"-fault).
- If the display is missing one or more segments, proceed to section 7.2.
- If the display is totally empty, proceed to section 7.3.1.
- If the contrast is low, proceed to section 7.3.2.
- If the all the segments in the display are "lit" proceed to section 7.4.

5.2 Segments are missing.

Open the phone and check for liquid damage. Replace the display. Observe that there are two kinds of display for GH 688.

5.3 The display is totally empty or the contrast is low.

5.3.1 The display is totally empty.

Start the phone using a dummy battery. Check the current consumption.

- If the phone consumes more than 200mA, check the display and see if it is damaged.

  * If it isn't, replace the elastomer and try again.

    * If it doesn't help, replace the display and try again. If the current consumption still is high, proceed to chapter 3 ("Doesn´t start"-fault).

- If the phone consumes less than 200mA, open the phone and check for liquid damages.

5.3.2 The display is totally empty or the contrast is low.

Give the board power and start it up without a display mounted.

GH 688

The front side of the board is shown in fig. 5.1

Measure the voltages at V608 (class A) and V611 (class A). The GH 688 uses displays of two different brands, Philips and Seiko. Fig. 5.2 and 5.3 shows typical voltage values for both brands.

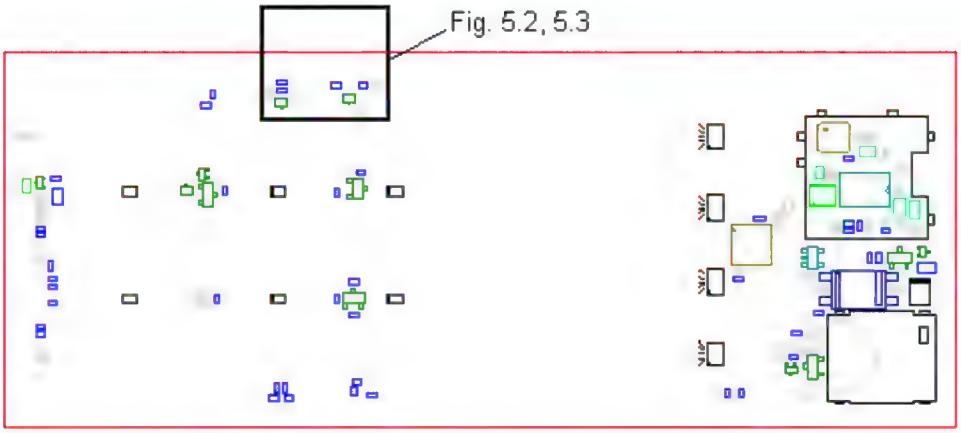


Fig. 5.1

Applies for KRC 114 245 and KRC 114 277 (Philips display):

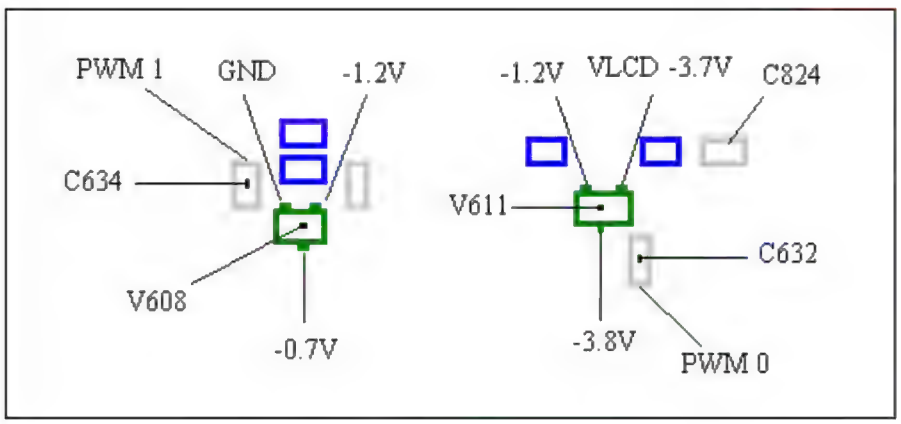


Fig. 5.2

Applies for KRC 114 279 (Seiko display):

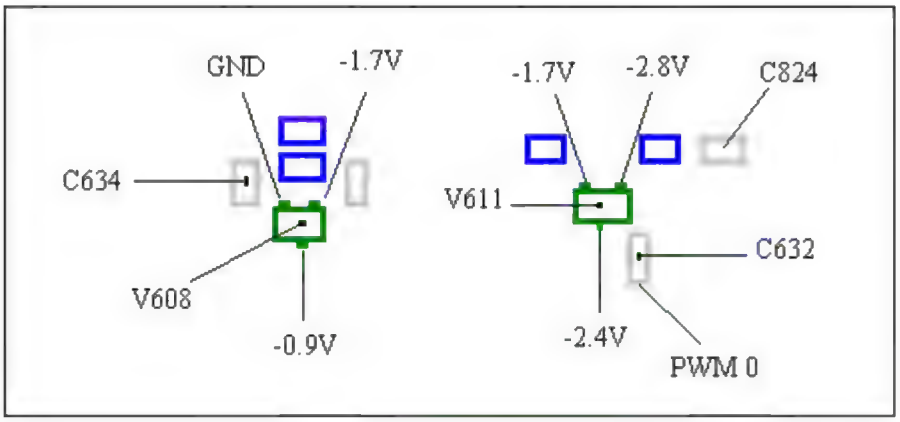


Fig. 5.3

All of the values approximately 0.2V

If one or more of the voltages are incorrect, measure the resistance if C633 (class A, >100 kohms, fig. 5.5) and C824 (class A, >25 kohms, fig. 5.2 and 5.3).

- If any of the resistances are too low, replace the corresponding capacitor.
- If both the resistances are correct, replace both diodes.

  * If any of the voltages at the diodes still are wrong after replacing them, check the solderings at D600 pads 95 and 96.

    * If they are correct, replace C634 and C632 (class A, fig. 5.2 and 5.3)

Applies for KRC 114 245 and KRC 114 277 (Philips display):

- Make sure that there VLCD (~-3.7V) voltage at H622 pad 5 (fig. 5.5).

  * If there is no, check the resistances from H622 pad 5 to V611 pin 2 (~0 ohms) and from H622 pad 3 to ground (~0 ohms).

    * If any of the resistances are too high there is a foil damage and the phone is to be discarded.

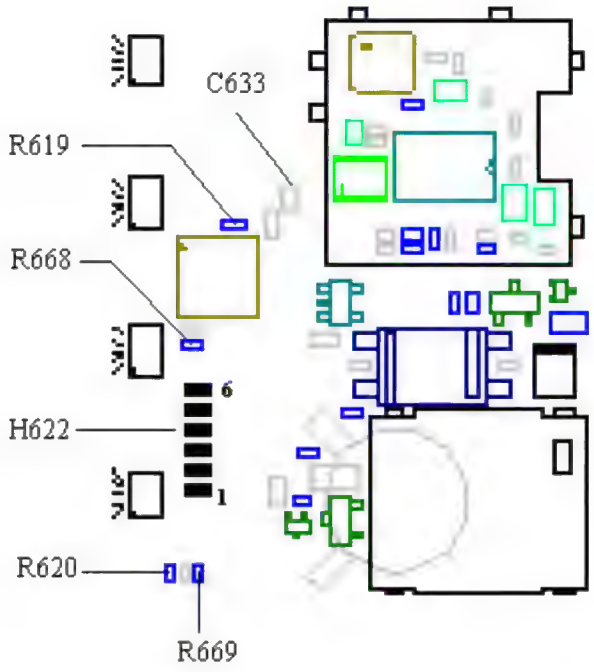


Fig. 5.5

If the problem isn't solved, send the phone to the next level.

Applies for KRC 114 279 (Seiko display):

- Make sure that there VLCD (~-2.8V) voltage at H622 pad 5 (fig. 5.5).

  * If there is no, check the resistances from H622 pad 5 to V611 pin 2 (~0 ohms) and from H622 pad 3 to ground (~0 ohms).

    * If any of the resistances are too high there is a foil damage and the phone is to be discarded.

If the problem isn't solved, proceed to section 5.4 (KRC 114 279).

GA 628

The front side of the circuit board is shown in fig. 5.7.

Measure the voltages at the V615 (class A) diode. Compare the measurement to the values in fig. 5.8.

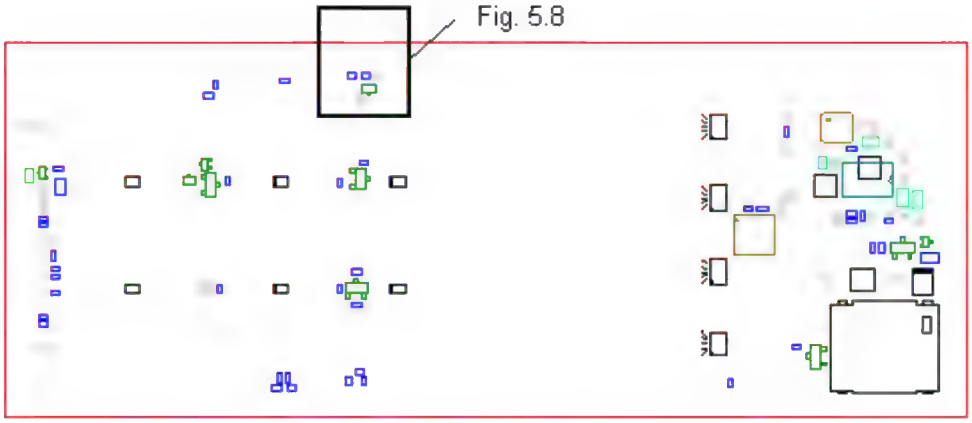


Fig. 5.7

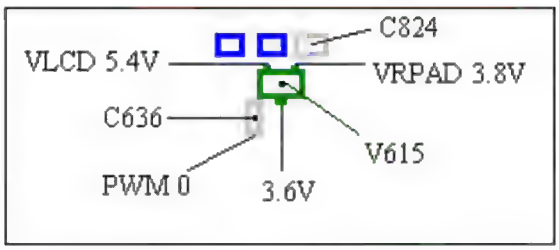


Fig. 5.8

All of the values approximately 0.2V

- If any of the values differ, measure the resistance of C633 (class A, >100 kohms, fig. 5.10) and C824 (class A, >25 kohms, fig. 5.8).
  - * If any of the resistances are too low, replace the corresponding capacitor.
  - * If the resistances and VRPAD are correct, replace the diode.
    - * If the voltages (except VRPAD) at the diode are still incorrect after replacing it, check the soldering at D600 pad 96. If it's correct, replace C636 (class A, fig. 5.8).
  - * If VRPAD is incorrect, proceed to chapter 3 ("Doesn´t start"-fault).

Make sure that the voltage VLCD (~5.4V) is at H624 pad 1.

- If it's not, check the resistances from H624 pad 1 to V615 pin 2 (~0 ohms) and from H624 pad 2 to ground (~0 ohms).
  - * If any of the resistances are too high there is a foil damage and the phone should be discarded.

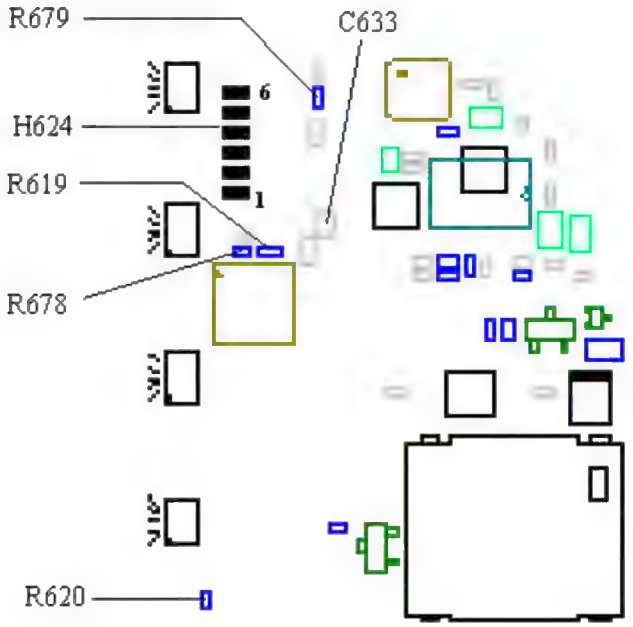


Fig. 5.10

If the problem isn't solved, send the phone to the next level.

5.4 All the segments in the display are "lit".

Open the phone and check for liquid damage.

- Try with another display and elastomer.

  * If it doesn't help, give the board power and start it up without display.

GH 688

Applies for KRC 114 245 and KRC 114 277 (Philips display):

Measure the voltages at the display pads H622 (fig. 5.5):

Pad #	Used for	Voltage
1	Not in use	-
2	I^2C Clock	~3.2V
3	GND	0V
4	VDIG	~3.2V
5	VLCD	~-3.8V
6	I^2C Data	~3.2V

Table 5.1

- If VLCD voltage is missing, proceed to section 5.3.
- If the I^2C-DATA or the I^2C-CLOCK voltages are missing, check VDIG (~3.2V).

  * If VDIG is incorrect, proceed to chapter 3 ("Doesn't start"-fault).

  * If VDIG is correct, measure the resistances of R619 (class A, 2.2 kohms), R620 (class A, 2.2 kohms), R668 (class A, 10 kohms) and R669 (class A, 10 kohms). Make sure the solderings at D600 pads 3 and 4 are correct.

    * If the resistances and the solderings are correct, replace D600 (class B).

Applies for KRC 114 279 (Seiko display):

Measure the voltages at the display pads H622 (fig. 5.5):

Pad #	Used for	Voltage
1	Not in use	-
2	I^2C Clock	~3.2V
3	GND	0V
4	VDIG	~3.2V
5	VLCD	~-2.8V
6	I^2C Data	~3.2V

Table 5.2

- If VLCD is incorrect, proceed to section 5.3.
- If the I^2C-DATA or the I^2C-CLOCK voltages are missing, check VDIG (~3.2V).

  * If VDIG is incorrect, proceed to chapter 3 ("Doesn't start"-fault).

  * If VDIG is correct, measure the resistances of R619 (class A, 2.2 kohms), R620 (class A, 2.2 kohms), R668 (class A, 10 kohms) and R669 (class A, 10 kohms). Make sure the solderings at D600 pads 3 and 4 are correct.

    * If the resistances and the solderings are correct, replace D600 (class B).

GA 628

Measure the voltages at the display pads H624 (fig. 5.10):

Pad #	Used for	Voltage
1	VLCD	~5.4V
2	GND	0V
3	VDIG	~3.2V
4	VDIG	~3.2V
5	I^2C Data	~3.2V
6	I^2C Clock	~3.2V

Table 5.3

- If VLCD is incorrect, proceed to section 5.3.
- If the I^2C-DATA or the I^2C-CLOCK voltages are missing, check VDIG (~3.2V).

  * If VDIG is incorrect, proceed to chapter 3 ("Doesn't start"-fault).

  * If VDIG is correct, measure the resistances of R619 (class A, 2.2 kohms), R620 (class A, 2.2 kohms), R678 (class A, 10 kohms) and R679 (class A, 10 kohms). Make sure the solderings at D600 pads 3 and 4 are correct.

    * If the resistances and the solderings are correct, replace D600 (class B).

If the problem isn't solved, send the phone to the next level.

Note: Fig. 5.4, 5.6 and 5.9 are not in this document.

6 Charging.

6.1 Kind of charging fault.

Do a visual check of the battery screws and system connector. Replace if needed. Start the phone with a fully charged battery using the On/Off key.

- If it doesn't start, proceed to chapter 3 ("Doesn´t start"-fault).
- If the phone starts and indicates that it is charging without a charger connected proceed to section 6.2.
- If the phone doesn't indicate that it is charging, turn it off and connect a charger to the system connector.

  * If it starts, indicates that it is charging and lights the red top indicator then the phone is probably working correctly. To verify this, perform the test described in 6.1.1.

  * If the phone doesn't start, proceed to section 6.3

  * If the phone starts and indicates that it is charging but doesn't charge, proceed to section 6.4.

  * If it starts and indicates that it is charging but the red top indicator isn't lit, proceed to chapter 9 ("Illumination"-fault).

6.1.1 Verifying the charging function.

Connect an ordinary battery to the phone. The voltage of the battery must be so high that you can start the phone with it. Otherwise the charging doesn't start immediately.

Cut the cable from a charger and make a charging test cable.

Connect the charging test cable to a power supply that shows the current consumption. Make sure that the DCIO pin is connected to the positive outlet of the power supply. As an alternative you can connect an ordinary battery charger in serial with an ampere meter.

Set the power supply at 7.6V and a current limit of 700mA.

Connect the charging test cable to the system connector of the phone and check the current consumption.

- There's nothing wrong with the charging function if the phone starts, indicates in the display that it's charging and switches between 700mA (500-800mA depending on charger model if utilising the alternative solution) and ~5mA with a few seconds interval.

Every time you repair a charging fault you have to verify the charging function as described above.

6.2 Indicates charging without a charger.

Open the phone and check for liquid damages.

The component side of the circuit board is shown in fig. 6.1.

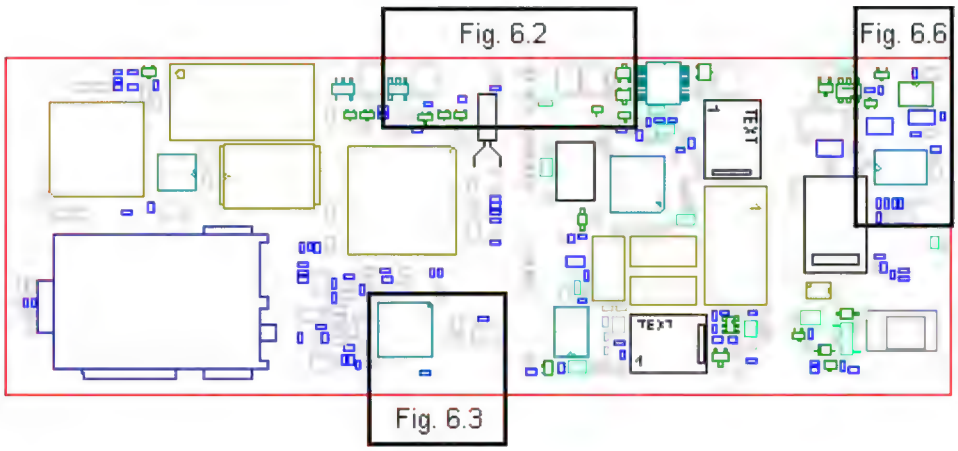


Fig. 6.1

Give the board power and start it with the On/Off key. Check the voltages VDIG (~3.2V), VRAD (~3.8V, fig. 6.2) and the resistance in R703 (class A, ~0 ohms, fig. 6.3).

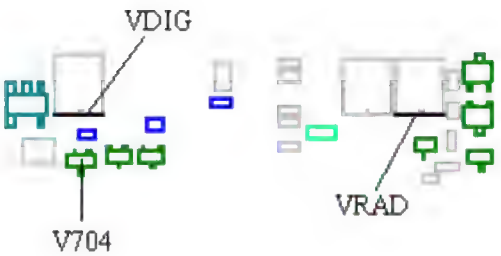


Fig. 6.2

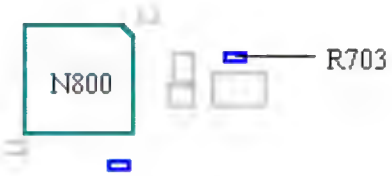


Fig. 6.3

- If any of the voltages are incorrect, proceed to chapter 3 (“Doesn´t start”-fault).
- If the voltages are correct, send the phone to the next level.

When you’ve repaired the fault you need to verify the charging function as described in section 6.1.1.

6.3 Doesn't start when charger is inserted.

Open the phone and check for liquid damage.

Check the pads at the system connector for oxidation and burn damages, especially on pad 10 (GND, fig. 6.4).

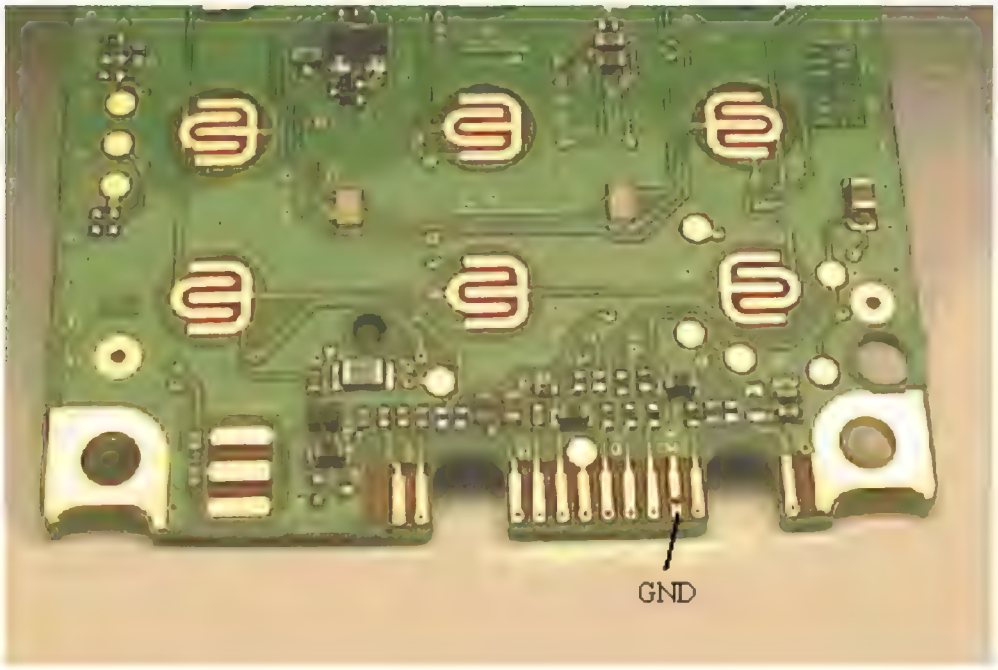


Fig. 6.4

Measure the resistance from DCIO to VBATT (~390 ohms, fig. 6.5).

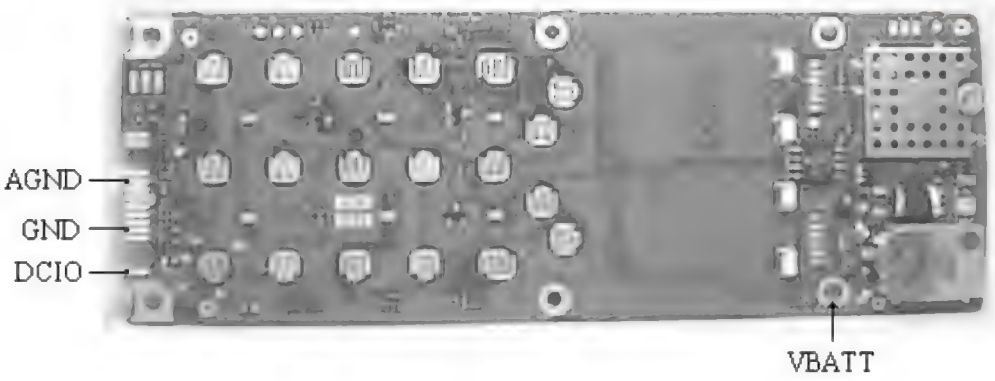


Fig. 6.5

- If the resistance is too low, replace V453 (class B).
- If it is too high, measure the resistance in R468 (class B, ~0.1 ohms) and R467 (Class A, ~390 ohms, all displayed in fig. 6.6).

  * If the measured values are correct, check the resistance from DCIO to R467 (~0 ohms, fig. 6.5, 6.6).

* If the resistance is too high there is a foil damage and the phone is to be discarded.

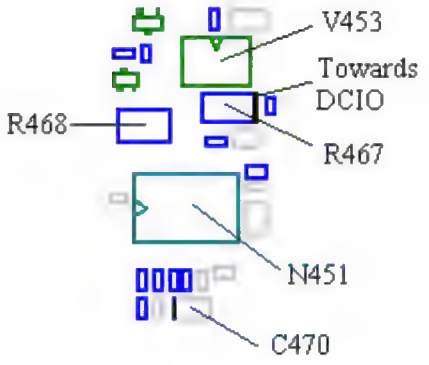


Fig. 6.6

Check the resistance from GND (pad 10) to AGND (pad 4) at the system connector (~0 ohms, fig. 6.5).

- If the resistance is too high there is a foil damage and the phone is to be discarded.

Give the board power and start it by grounding N451 pin 6 (fig. 6.6).

- If the phone starts the problem can't be solved at this level.
- If it doesn't start, replace V453 (class B, fig. 6.6).

  * If that doesn't help, replace V704 (class A, fig. 6.2).

When you've repaired the fault you need to verify the charging function as described in section 6.1.1.

6.4 Starts and indicates that it is charging but doesn't charge.

Open the phone and check for liquid damage.

Check the system connector pads for oxidation and burn damages, especially pad 10 (GND, fig. 6.4).

Measure the resistance from DCIO to VBATT (~390 ohms, fig. 6.5).

- If the resistance is too high, measure R468 (class B, ~0.1 ohms) and R467 (class A, ~390 ohms, both of the on fig. 6.6).

  * If the values are correct, check the resistance from DCIO to R467 (~0 ohms, fig. 6.5, 6.6).

    * If the resistance is too high there is a foil damage and the phone is to be discarded.

Check the resistance from GND (pad 10) and AGND (pad 4, fig. 6.5) at the system connector pads (~0 ohms).

- If the resistance is too high there is a foil damage and the phone is to be discarded.

If the problem isn't solved, send the phone to the next level.

When you've repaired the fault you need to verify the charging function as described in section 6.1.1.

7 SIM fault ("Insert card").

7.1 Definition of SIM-fault.

Insert a working SIM card and a fully charged battery into the phone.

- If the display says **"Wrong card"** or **"Insert correct card"** when you start the phone it means that the phone is SIM-locked and cannot be repaired at this level.
- If the display say **"Phone lock"** it means that the customer has locked the phone with a personal code. The phone will be unlocked in the reset part of the level 3 test.
- If the display says **"PIN:"** or **"Enter PIN"** it means that the SIM-card is locked with a personal code.
- Only if the display say **"Insert card"** there is a SIM fault.

7.2 Measuring VSIMPAD.

Measure the voltage at the system connector between pad 8 and 10 (~4.9V, fig. 7.1).

- If the voltage is too low or missing, proceed to section 7.3.
- If the voltage is correct, proceed to section 7.4.

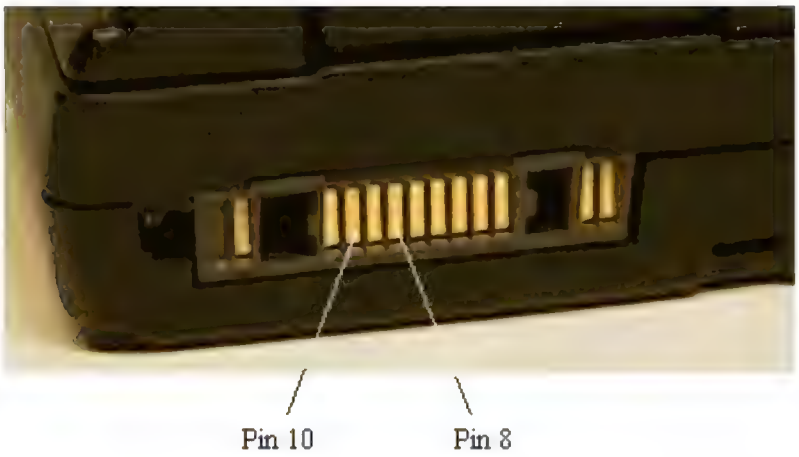


Fig. 7.1

Fig. 7.2 shows the component side of the board and fig. 7.3 the front side.

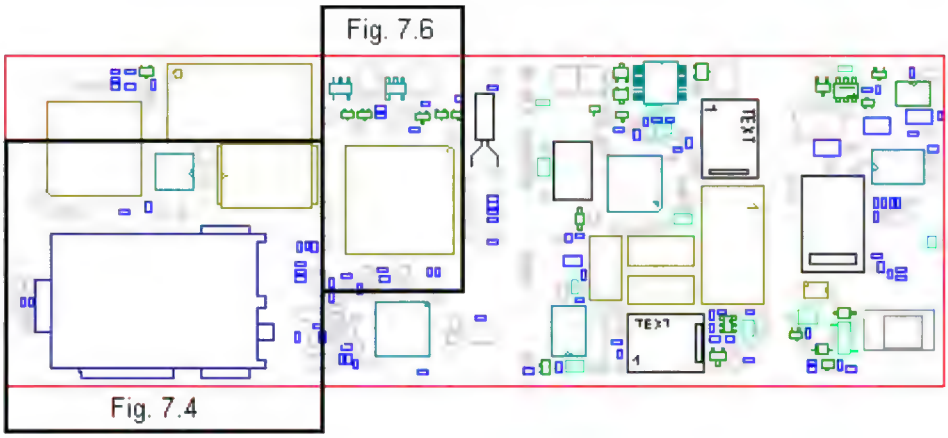


Fig. 7.2

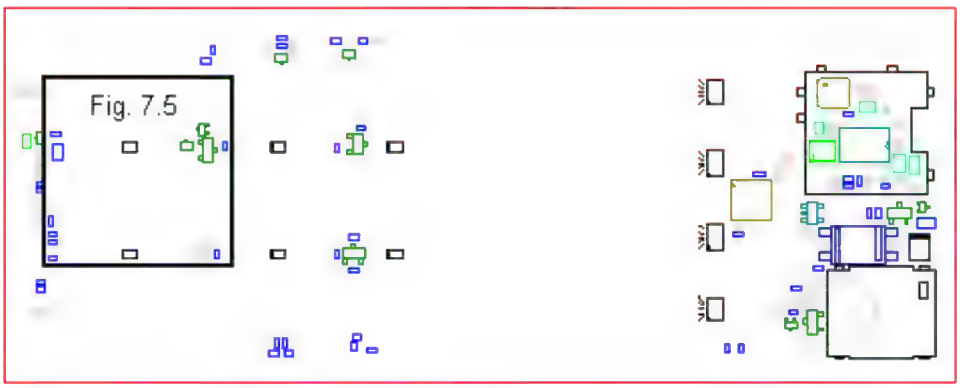


Fig. 7.3

7.3 Voltage at VSIMPAD is missing.

Open the phone and check for liquid damages, especially below the SIM-card (J603, fig. 7.4).

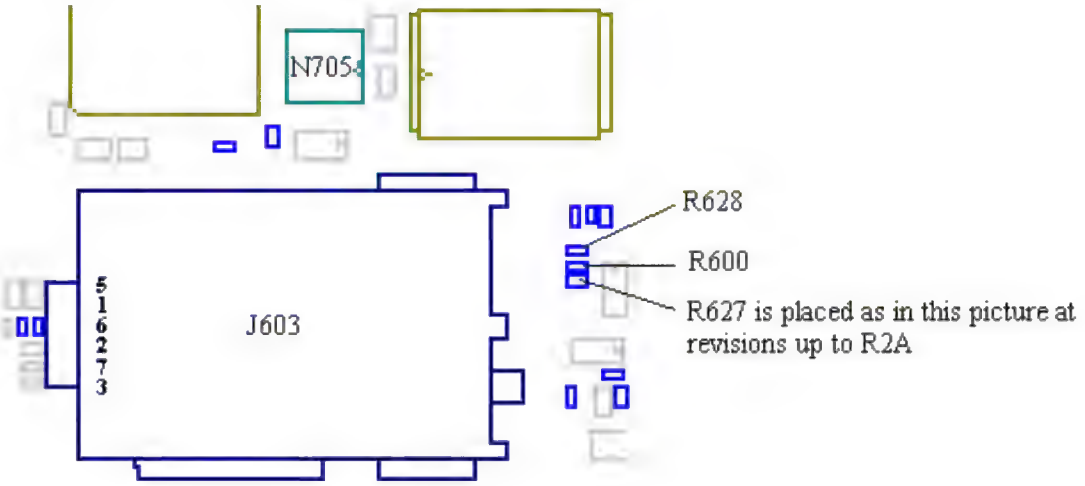


Fig. 7.4

Measure the resistance of R724 (class A, ~47 ohms, fig. 7.5).

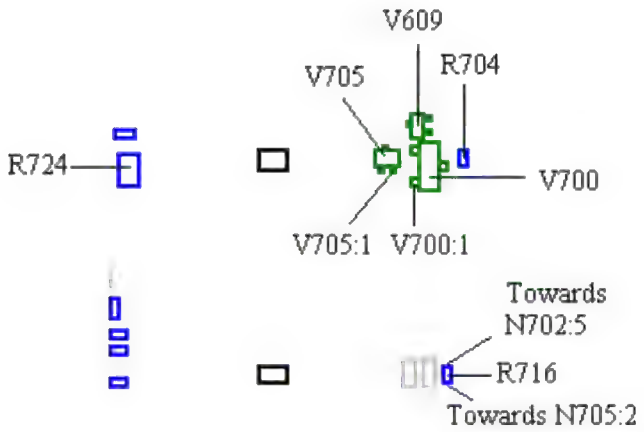


Fig. 7.5

Give the circuit board power and start it up. Measure the input voltage at N705 pin 2 (~3.1V, fig. 7.4).

- If the voltage is too low or missing, check the VDIG voltage (~3.2V) at N702 pin 5 or at C600 (fig. 7.6).

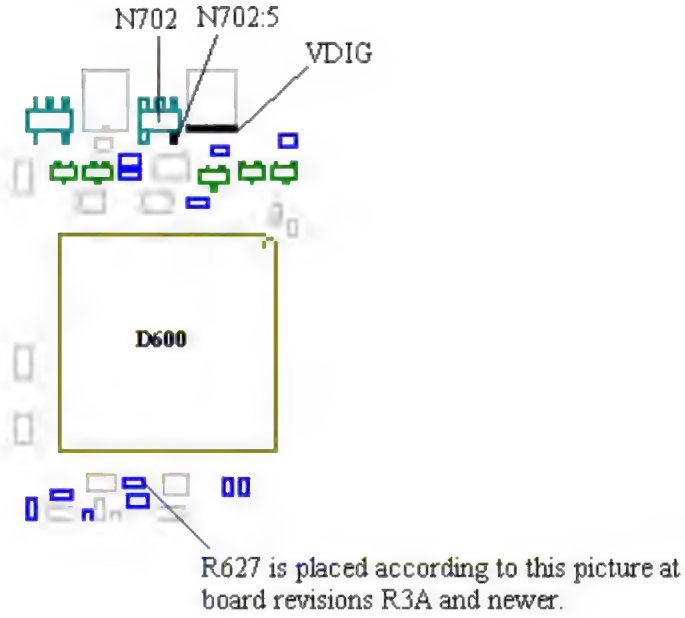


Fig. 7.6

* If VDIG is too low, measure the resistance to ground.

  * If it's more than 500 ohms, replace N702 (class A).

  * If it's less than 500 ohms, send to next level.

* If VDIG is correct, measure the resistance of R716 (class A, ~4.7 ohms, fig. 7.5).

  * If the resistance is correct, check the resistance from R716 to N702 pin 5 (~0 ohms) and from R716 (opposite side) to N705 pin 2 (~0 ohms).

    * If any of the resistances are too high there is a foil damage and the phone should be discarded.

* If the input voltage at N705 pin 2 is correct, measure the output voltage VSIMPAD (~5V) at N705 pin 3 (class A, fig. 7.4).

  * If the voltage is incorrect, replace N705.

  * If there is correct voltage, it could be foil damage between N705 pin 3 and R724 or between N705 pin 3 and V700 pin 1/V705 pin 1 (fig. 7.5, 7.4). If there is a foil damage the phone should be discarded.

7.4 There is voltage at VSIMPAD.

Check the SIM-card holder and make sure that the SIM-card contacts aren't dirty, bent or broken.

Open the phone and check for liquid damage, especially below the SIM-card holder (J603, fig. 7.4).

Make sure that the SIM-card holder is properly soldered.

Make sure the SIM-card holder pads aren't loose (if they are, then the phone should be discarded due to foil damage) and that the board leads are intact.

Measure the resistance of R704 (class A, ~100 kohms, fig. 7.5).

Check the solderings at D600 pins 64, 72, 73, 74 and 75 (fig. 7.6).

Measure the resistance of R600 (class A, ~33 ohms), R627 (class A, ~0 ohms) and R628 (class A, ~33 ohms, fig. 7.4). The resistor R627 is placed according to fig. 7.7 at revision R3A and above.

Check the resistances from R600 to J603 pin 2 (~0 ohms) and from R628 to J603 pin 7 (~0 ohms).

- If any of them are too high there is a foil damage and the phone should be discarded.

Replace V700 (class A) and V609 (class A, fig. 7.5).

If the problem isn't solved, send the phone to the next level.

8 Keyboard.

8.1 Kind of keyboard fault.

Insert a SIM card and a fully charged battery.

Start the phone using the On/Off-key.

- If it doesn't start at all proceed to chapter 3 ("Doesn't start"-fault).
- If the phone (GH 688) consumes approximately 60mA (average, varies), the battery indicator blinks once or twice and then turns itself off proceed to section 8.2.

Press all the keys (including the volume keys on the GH 688) to check which of the keys that are faulty. The following is the easiest way to check the keyboard:

1. Go to Menu/Setting/Key sound and choose "Click".
2. Press keys 1-9, *, 0, #. The phone should click and the display should show the corresponding symbol for each key pressed. Then press "Yes", "No", "Clr", "<" and ">". When pressing "Yes" the phone should try to place a call and when pressing "No" it should disconnect it. The "Clr" key should make the phone erase one or more symbols/numbers in the display when pressed. When pressing the keys "<" and ">" the phone should enter the menu for you to skim through.
3. Press the volume keys on the side of the phone (GH 688). The phone should click at every key pressed.

- If only the volume keys are faulty proceed to section 8.2
- If one or more of the keyboard keys are faulty proceed to section 8.3
- If the volume keys and one or more of the keyboard keys are faulty proceed to section 8.2 and then to 8.3.

8.2 Volume keys faulty.

Open the phone and check for liquid damage, especially around X820 (fig 8.1).

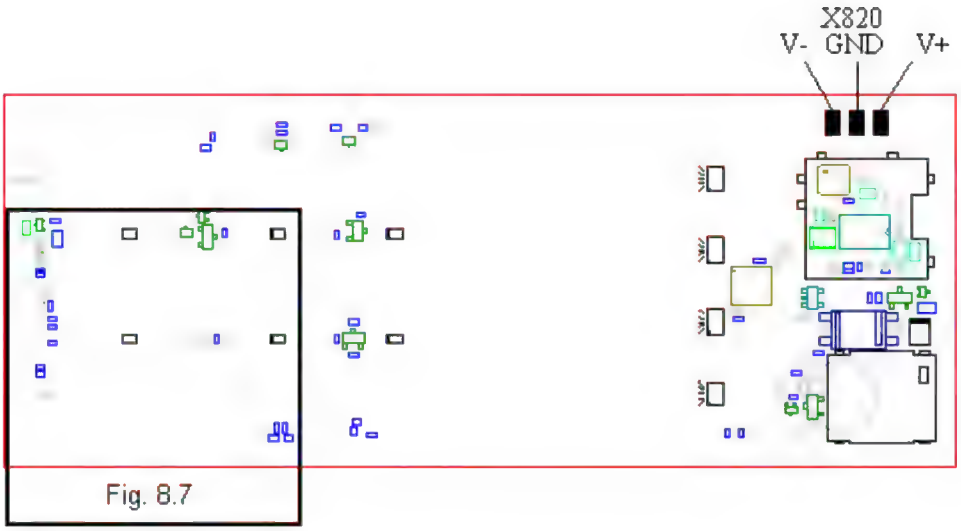


Fig. 8.1

Clean the pads **thoroughly**.

Measure the resistance from V+ to GND.

- If the resistance is more than 25 kohms, replace the flex film for the volume keys. Assemble the phone and check if the volume keys work according to 8.1.

  * If not, replace D600 (class B, fig. 8.2).

- If the resistance is less than 25 kohms, replace D600 (class B, fig. 8.2).

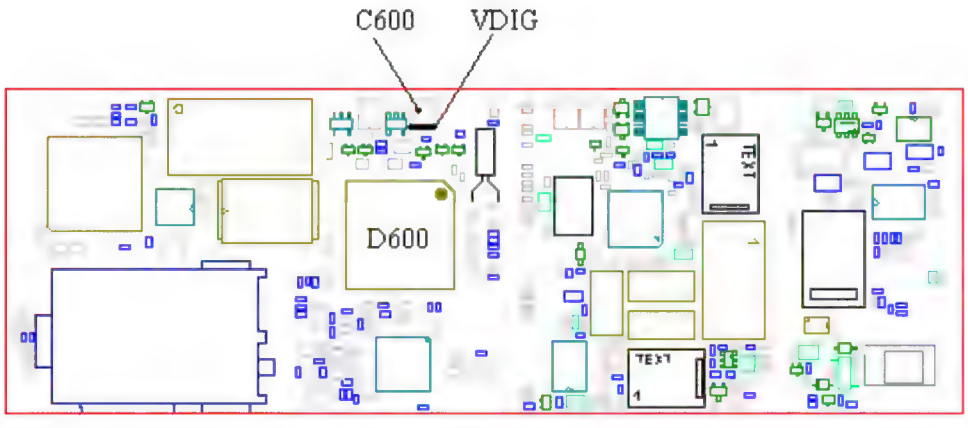


Fig. 8.2

8.3 One or more keys faulty.

Open the phone and check for liquid damage, especially around the keys that are faulty.

Clean the keyboard pads **thoroughly** and assemble the phone with a new keyboard. Check functionality according to 8.1.

If it didn't help, open the phone, give it power and start it up.

Measure VDIG (~3.2V) on C600 (fig. 8.2).

- If VDIG is incorrect, proceed to chapter 3 ("Doesn´t start"-fault).

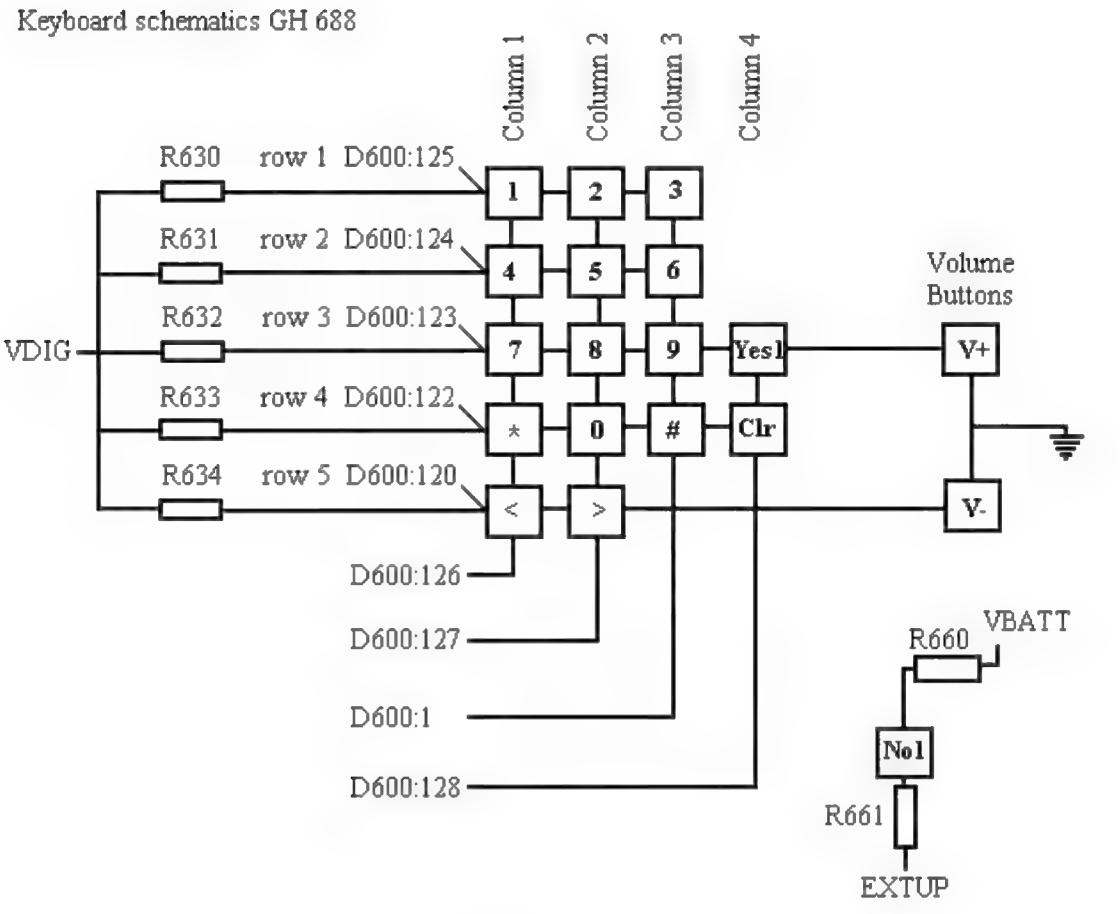


Fig. 8.3

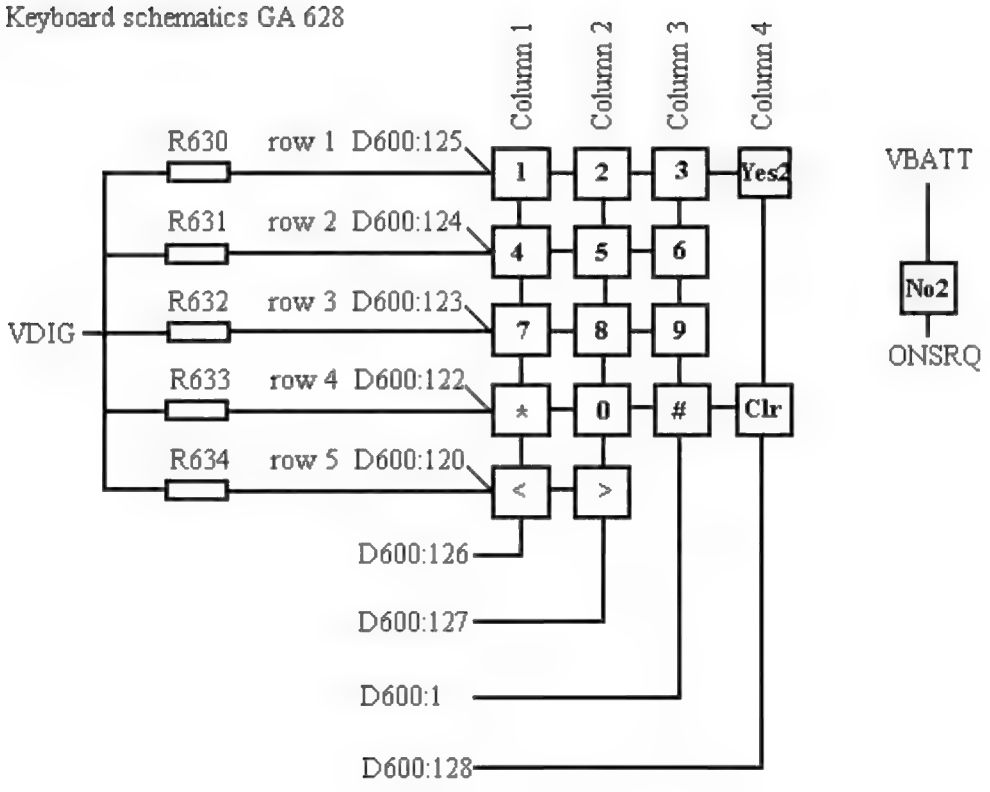


Fig. 8.4

- If VDIG is correct, check if there is correct voltage (~3.2V) at marked sides on the pads of the faulty keys (GH 688 shown on fig. 8.5, GA 628 on fig. 8.6).

GH 688

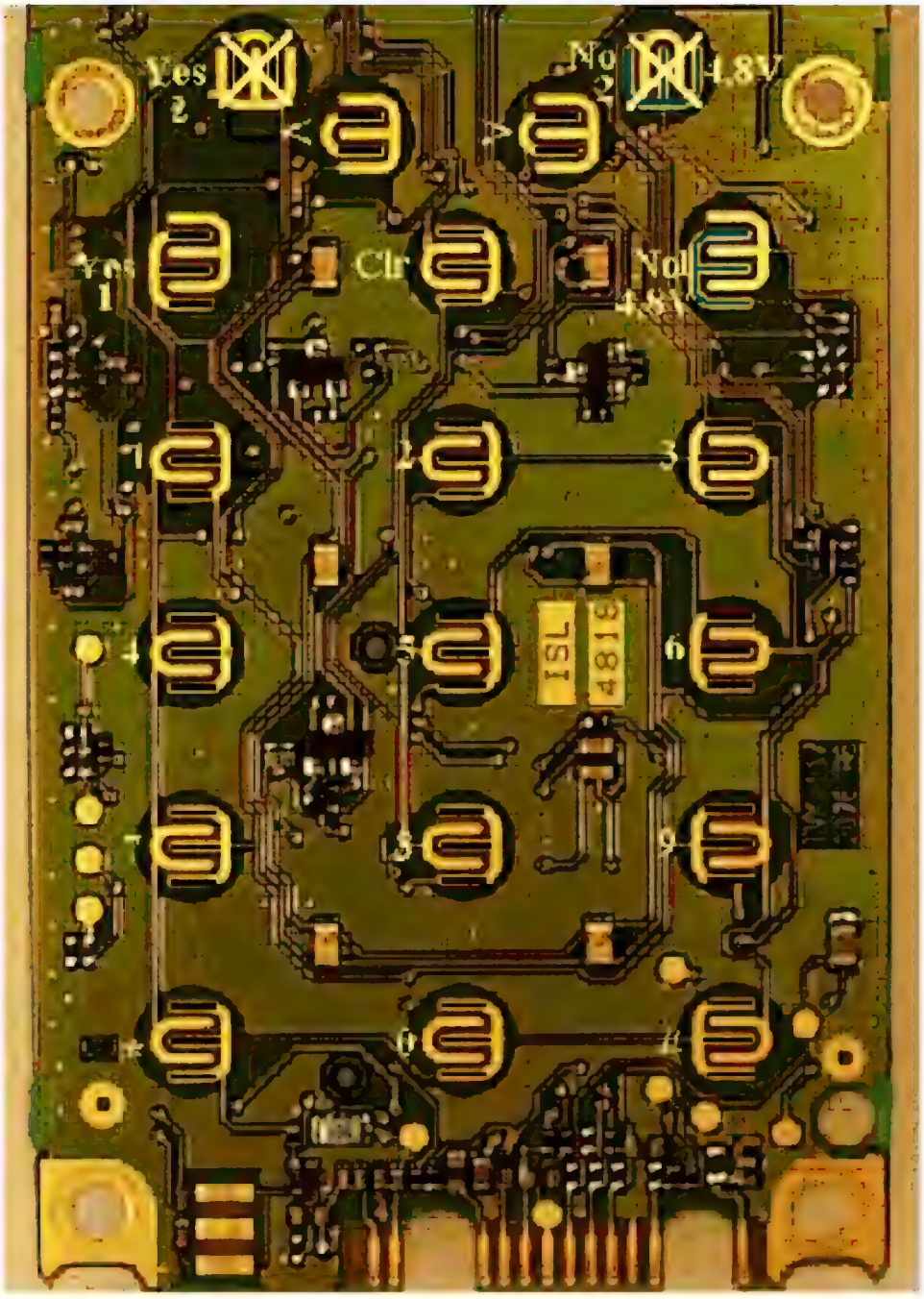


Fig. 8.5

Crossed out pads are not in use.

GA 628

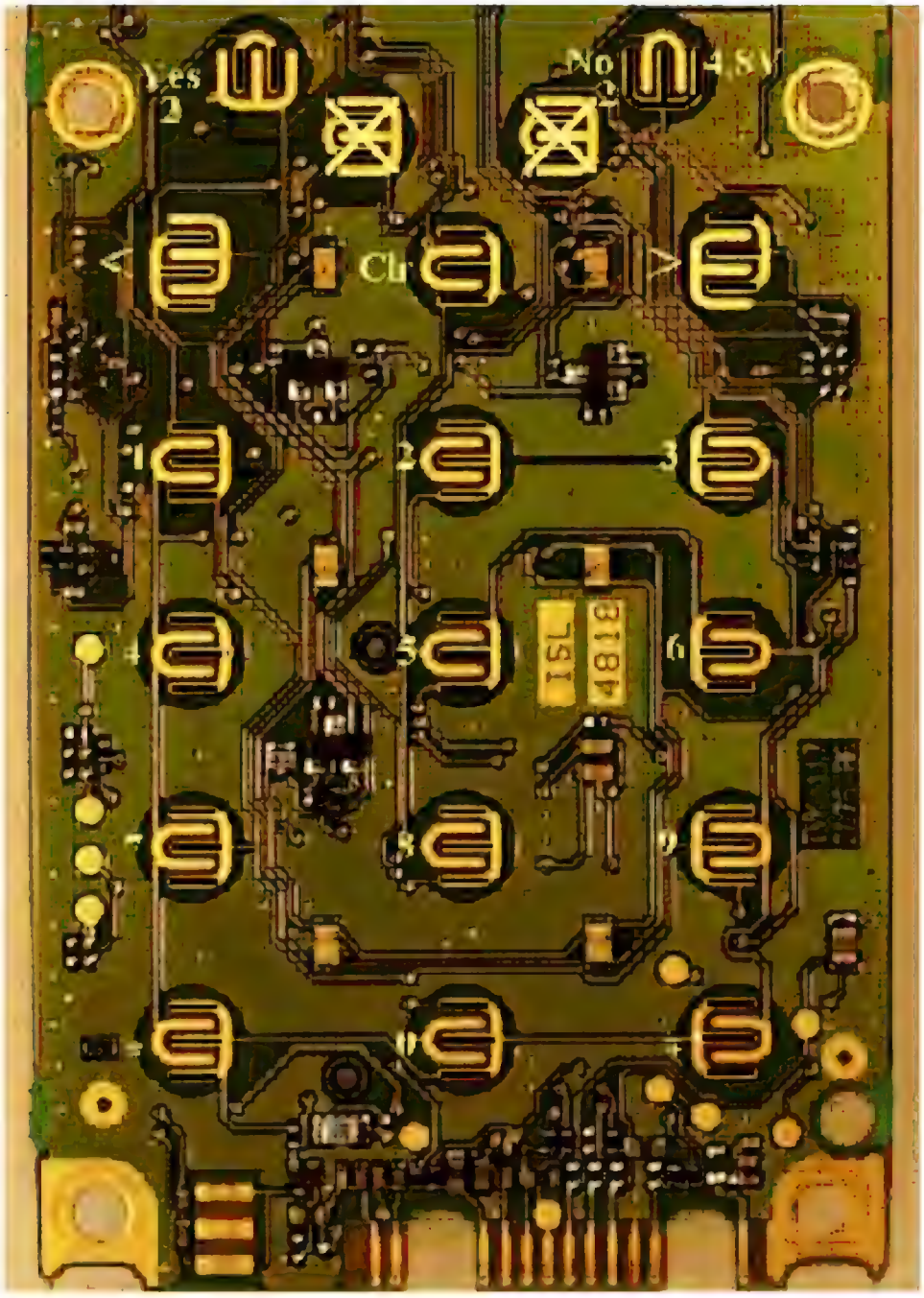


Fig. 8.6

Crossed out pads are not in use.

If there is no voltage at a whole row according to fig. 8.5/8.6 (for instance 1, 2, 3, Yes2), measure the resistance of that row's resistor (R630, R631, R632, R633 and R634, fig. 8.7). In this case the R630 resistor. All the resistors are of class A and should be ~100kohms.

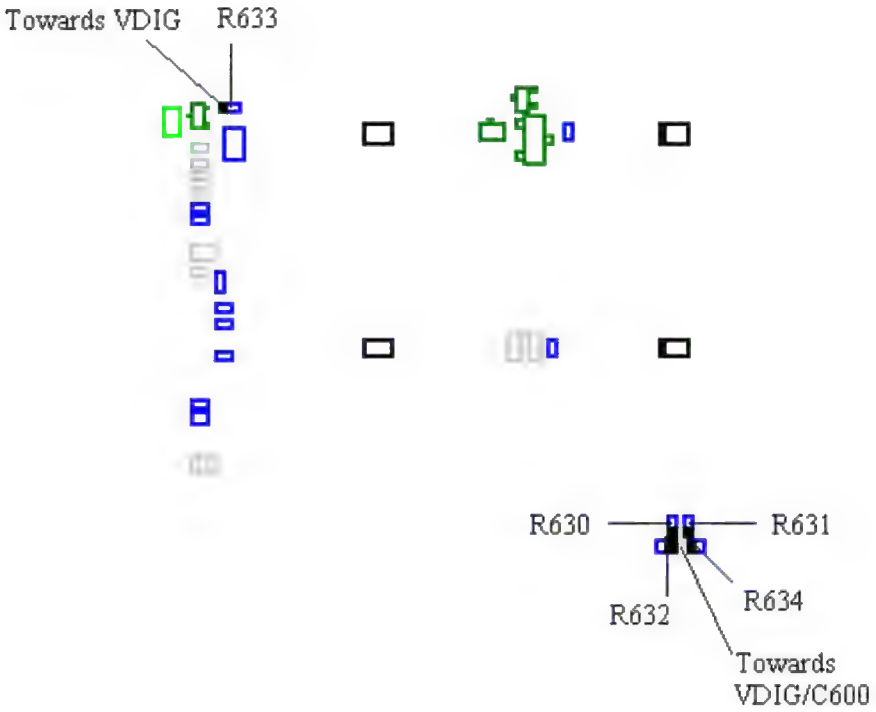


Fig. 8.7

- If the resistance is correct, measure the resistance from C600 (fig. 8.2) to marked side of the resistors of the row (R630-R634, in this case R630, should be ~0 ohms) and from the other side of the resistor to the marked side of the keyboard pads (~0 ohms).

  * If any of the resistances are too high it means that there's a foil damage in the circuit board and the board is to be discarded.

  * If all of the resistances are correct, check the solderings at D600 pads 1 and 120-128.

    * If all of the solderings are correct, replace D600 (class B).

If there are voltage on only some of the pads on a row (for instance on pad 1 and 2 but not on pad 2, 4 or Yes2), there's a foil damage and the board is to be discarded. This can be verified through checking the resistance from marked side on a working pad to marked side of a non-working pad (~0 ohms). The foil damage is often caused by liquid damage.

If a **column** or a part of it is faulty, check the solderings of D600 pads 1 and 120-128.

- If all the solderings are correct, replace D600 (class B).

9 Illumination and buzzer.

9.1 Kind of fault.

Insert a dummy battery and a SIM card into the phone, press the On/Off-key and wait for the phone to get serv (instrument or net).

- If the phone doesn't beep when starting up, go to Menu/Setting/Ring level (Menu/Ring level at the GA 628) and try to raise the ring level to full. If there is no sound or if it is only faint proceed to section 9.2.
- If the illumination of the display doesn't light up at start, proceed to section 9.3.
- If the illumination of the keyboard doesn't light up at start proceed to section 9.4.
- If the top indicator of the phone doesn't start to blink green when getting serv, proceed to section 9.5.

When the phone has gotten serv and the top indicator starts to blink green lower the battery voltage to 4.2V. The top indicator should start to blink red instead of green, the battery indicator should show an empty battery and the phone should warn with a beep.

- If the battery indicator doesn't show an empty battery, the top indicator doesn't blink red and the phone doesn't beep it means that the phone needs a battery calibration.
- If the battery indicator shows an empty battery, the phone beep but the top indicator doesn't blink, proceed to section 9.6.
- If the top indicator glows with both colors and the buzzer sounds faintly, proceed to section 9.7.

9.2 Buzzer sounds faintly or not at all.

Open the phone and check for liquid damage.

Both sides of the circuit board are shown in fig. 9.1.

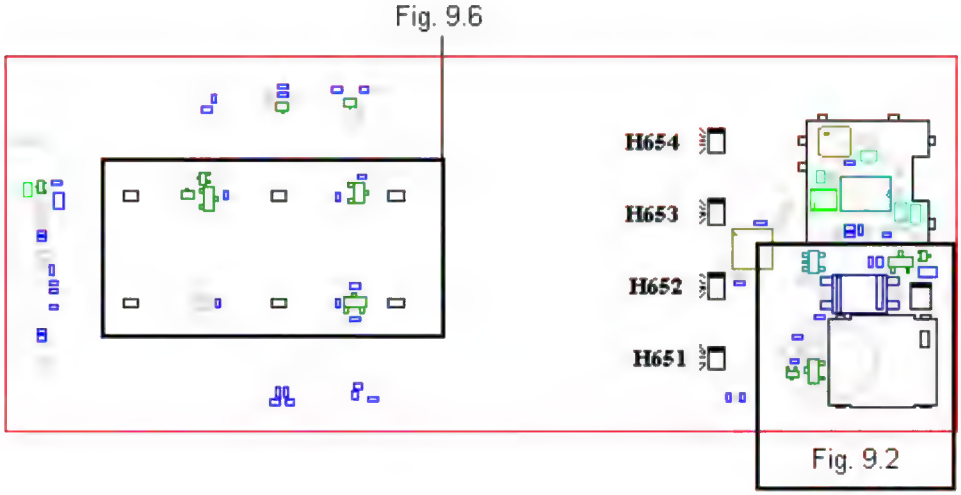


Fig. 9.1a

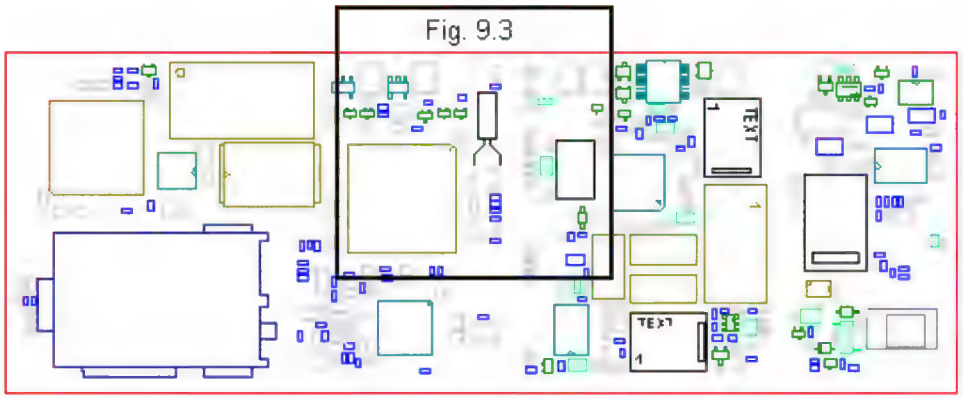


Fig. 9.1b

Make sure the buzzer, H600 (class A, fig. 9.1a) is properly soldered.

- If solderings are correct, replace the buzzer. Assemble the phone and test the buzzer again according to 9.1.

  * If the problem is solved, send the phone through the usual flow.

If the fault remains, disassemble the phone. Give the board power and start it up.

Measure the voltage at H600 pad 1 (~3.3V, fig. 9.2).

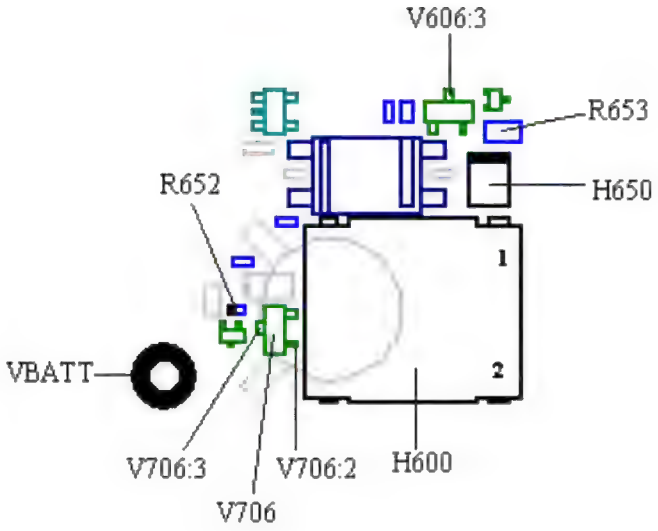


Fig. 9.2

- If the voltage is missing at H600 pad 1, measure VRPAD (~3.8V) at V706 pad 2 (class A, fig. 9.2).

  * If the voltage at V706 pad 2 is missing, check if VRPAD is at C453 (fig. 9.3).

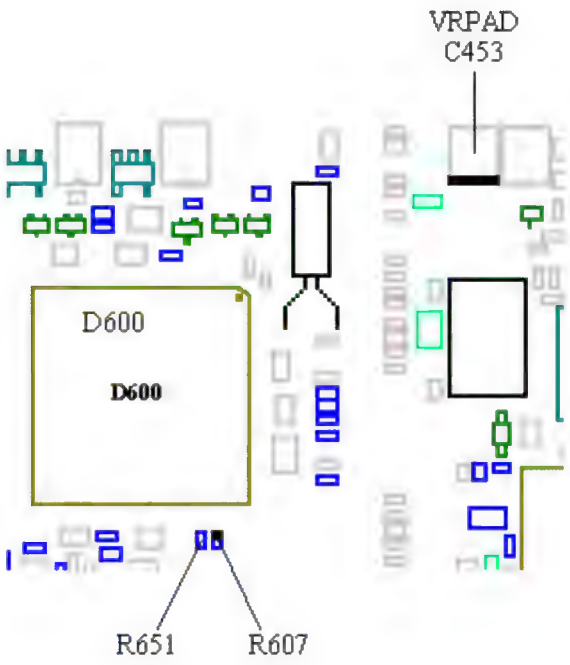


Fig. 9.3

* If VRPAD is incorrect or missing, proceed to chapter 3 (“Doesn´t start”-fault).

* If the voltage at C453 is correct, check the resistance from C453 and V706 pad 2 (~0 ohms).

* If the resistance is too high there is a foil damage and the phone should be discarded.

* If VRPAD at V706 pad 2 is correct, measure the resistance from VBATT to V706 pad 3 (~4.7 ohms, fig. 9.2)

* If the resistance is too high, replace R652 (class A, fig. 9.2).

* If the resistance is still too high after replacing R652 there is probably a foil damage somewhere between VBATT and marked side of R652 and the phone should be discarded.

* If the resistance from VBATT to V706 pad 3 is correct, replace V706 (class A).

Measure the resistance from H600 pad 2 to V606 pad 3 (10 ohms, fig. 9.2).

- If the resistance is too high replace R653 (class A, fig. 9.2).
- If the resistance is correct, check the soldering at D600 pad 91 (fig. 9.3).

* If the soldering is correct, replace R651 (class A, fig. 9.3) and V606 (class A, fig. 9.2).

* If that doesn't help, replace D600 (class B, fig. 9.3).

If the problem isn't solved, send the phone to the next level.

9.3 The illumination of the display is missing or faintly glowing.

Open the phone and check for liquid damage, especially at the marked area in fig. 9.4.

Make sure all the LEDs (H651, H652, H653 and H654, all class A, fig. 9.1) are properly mounted and soldered.

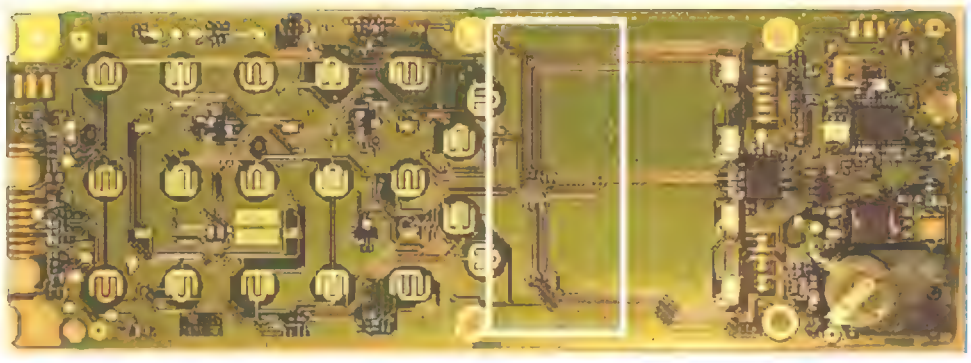


Fig. 9.4

Give the board power and start it up. If a few, but not all of the LEDs aren't lit, replace them.

- If none of the LEDs are lit, measure the resistance of one of them.

- If the resistance is ~0 ohms at least one of them is shorted out. The simplest way of finding out which one of them is shorted out is by looking underneath the LED like in fig. 9.5. You can usually see dirt beneath the LED that is causing the short circuit.

  * If you can't see anything like that, remove the LEDs in the following order; H654, H651, H653 and finally H652. Measure the resistance after removing a LED. When the resistance increases it means that the faulty LED is removed. Mount new LEDs where you have removed the old ones.

Fig. 9.5

- If the resistance of the LEDs is high, make sure that there is VBATT voltage at the marked side of the LEDs (fig. 9.1).

  * If VBATT is missing it most likely means that the phone is liquid damaged. If VBATT is correct, check that R612 (~0 ohms, class A), R610 (~27 ohms, class A) and R606 (~0 ohms, class A) are properly mounted and that they have the correct resistance (all in fig. 9.6).

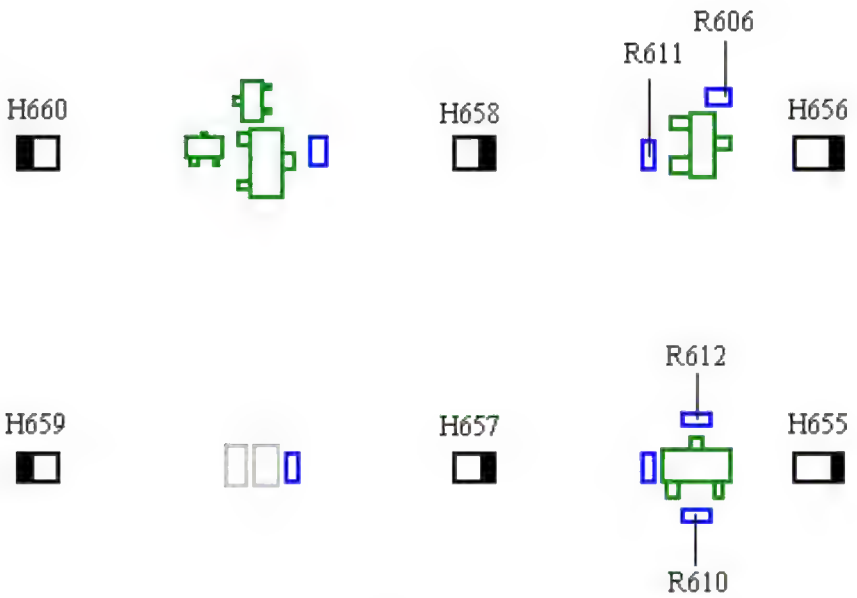


Fig. 9.6

Table 9.1 shows symptoms when the resistance of the resistors are incorrect.

Missing or broken	H651-H654	H655-H660
R606	Faintly glowing	Not lit
R611	Lit	Not lit
R612	Not lit	Faintly glowing
R610	Not lit	Lit

Table 9.1

- If none of the LEDs H651-H654/H655-H660 (fig. 9.1 and 9.6) are lit, measure the voltage at the marked of R607 (~3.1V, fig. 9.3). Before you measure you have to press a key on the phone to make the processor set the LED3K signal high for about 10 seconds.

  * If the voltage is missing, check the soldering at D600 pin 92 (fig. 9.3).

    * If the soldering is correct, replace D600 (class B).

  * If the voltage is correct, replace R607 (class A).

9.4 The keyboardillumination is missing or faintly glowing.

Open the phone and check for liquid damage, especially at marked area in fig. 9.4.

Make sure that all the LEDs H655-H660 (class A, fig. 9.6) are physically intact, correctly mounted and soldered.

Give the board power and start it up. If a few but not all of the LEDs are lit, replace them.

- If none of the LEDs are lit, make sure that the VBATT voltage is at marked side of the LEDs.

  * If VBATT is missing it most likely means that the phone is liquid damaged.

  * If VBATT is correct, check that R612 (~0 ohms, class A), R611 (~47 ohms, class A), R610 (~27 ohms, class A) and R606 (~0 ohms, class A) are properly mounted and that they have the correct resistance (all in fig. 9.6). Table 1 shows symptoms when the resistance of the resistors are incorrect.

- If none of the LEDs H651-H654/H655-H660 (fig. 9.1 and 9.6) are lit, measure the voltage at the marked side of R607 (~3.1V, fig. 9.3). Before you measure you have to press a key on the phone to make the processor set the LED3K signal high for about 10 seconds.

  * If the voltage is missing, check the soldering at D600 pin 92 (fig. 9.3).

    * If the soldering is correct, replace D600 (class B).

  * If the voltage is correct, replace R607 (class A).

9.5 Green LED at the topindicator doesn't work.

Open the phone and check for liquid damage.

The front side of the board is shown in fig. 9.1.

Make sure the double LED H650 (class A, fig. 9.1) is correctly soldered.

- If the solderings are correct, give the board power and start it up.

Measure the voltage at H600 pad 1 (~3.3V, fig. 9.2).

- If the voltage is missing at H600 pad 1, measure VRPAD (~3.8V) at V706 pad 2 (class A, fig. 9.2).

  * If the voltage at V706 pad 2 is missing, check if VRPAD is at C453 (fig. 9.3).

    * If VRPAD is incorrect or missing, proceed to chapter 3 ("Doesn´t start"-fault).

    * If the voltage at C453 is correct, check the resistance from C453 and V706 pad 2 (~0 ohms).

      * If the resistance is too high there is a foil damage and the phone should be discarded.

  * If the VRPAD voltage at V706 pad 2 is correct, measure the resistance from VBATT to V706 pad 3 (~4.7 ohms, fig. 9.2).

    * If the resistance is too high, replace R652 (class A, fig. 9.2).

      * If the resistance still is too high after replacing R652 there's probably a foil damage somewhere between VBATT and marked side of R652 and the phone should be discarded.

    * If the resistance from VBATT to V706 pad 3 is correct, replace V706 (class A).

Check the soldering at D600 pad 94.

If the problem isn't solved, send the phone to the next level.

9.6 Red LED at the topindicator doesn't work.

Open the phone and check for liquid damage.

The front side of the board is shown in fig. 9.1.

Make sure the double LED H650 (class A, fig. 9.1) is correctly soldered.

- If the solderings are correct, give the board power and start it up.

Measure the voltage at H600 pad 1 (~3.3V, fig. 9.2).

- If the voltage is missing at H600 pad 1, measure VRPAD (~3.8V) at V706 pad 2 (class A, fig. 9.2).

  * If the voltage at V706 pad 2 is missing, check if VRPAD is at C453 (fig. 9.3).

* If VRPAD is incorrect or missing, proceed to chapter 3 ("Doesn´t start"-fault).

* If the voltage at C453 is correct, check the resistance from C453 and V706 pad 2 (~0 ohms).

* If the resistance is too high there is a foil damage and the phone should be discarded.

* If VRPAD at V706 pad 2 is correct, measure the resistance from VBATT to V706 pad 3 (~4.7 ohms, fig. 9.2).

* If the resistance is too high, replace R652 (class A, fig. 9.2).

* If the resistance is still too high after replacing R652 there is probably a foil damage somewhere between VBATT and marked side of R652 and the phone should be discarded.

* If the resistance from VBATT to V706 pad 3 is correct, replace V706 (class A).

Check the soldering at D600 pad 93.

If the problem isn't solved, send the phone to the next level.

9.7 Both LEDs at the top indicator glows faintly and the buzzer sounds faintly.

Open the phone and check for liquid damage.

Give the board power and start it up.

Measure VRPAD (~3.8V) at v706 pin 2 (class A, fig. 9.2).

- If VRPAD is correct, replace V706 (class A).

  * If that doesn't help replace R652 (class A).

- If the voltage at V706 pin 2 is missing, check if there is voltage at C453 (~3.8V, fig. 9.3).

  * If it's incorrect or missing, proceed to chapter 3 ("Doesn´t start"-fault).

  * If the voltage at C453 is correct, check the resistance from C453 to V706 pad 2 (~0 ohms).

  *If the resistance is too high there is a foil damage and the phone should be discarded.

If the problem isn't solved, send the phone to the next level.

10 RTC

10.1 Find fault.

Insert a SIM card and a fully charged battery into the phone and start it up.

Set the correct time.

Remove the battery and reinsert it after a minute.

- If the time says 00:00 proceed to section 10.2.

Compare to the correct time.

- If the clock is speeding or is halted proceed to section 10.3

The component side of the circuit board is shown in fig. 10.1.

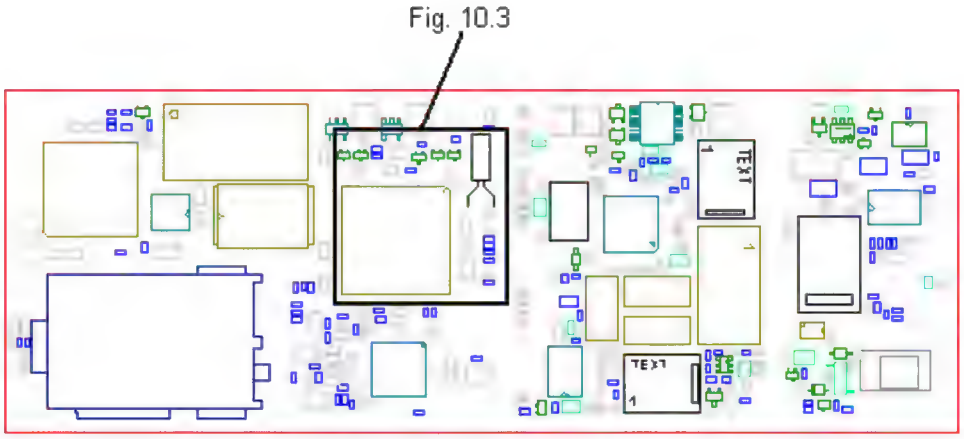


Fig. 10.1

10.2 The time says 00:00 after removed and reinserted battery.

Open the phone and check if the backup capacitor C720 (class A, fig. 1.2) is correctly soldered.

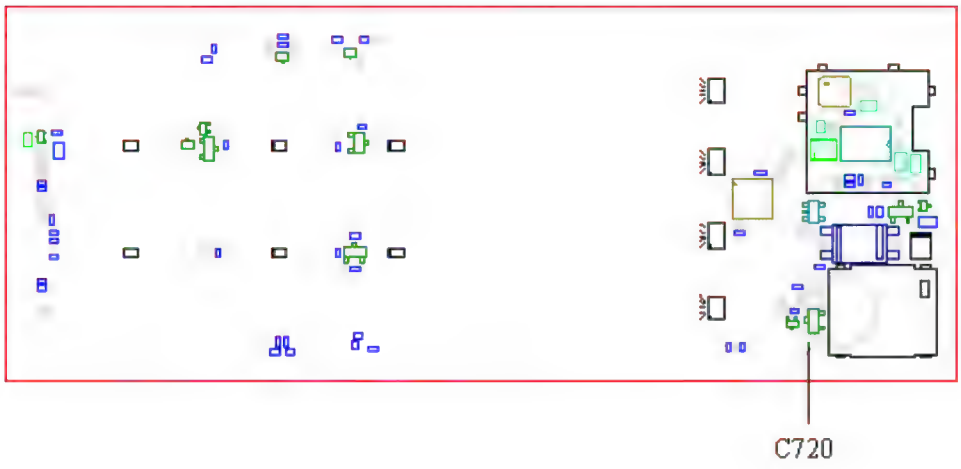


Fig. 10.2

If it is, replace it. Assemble the phone, start it and set the correct time. Wait a few minutes for the backup capacitor to charge. Remove the battery and reinsert it after a minute. Check if the error is fixed (the backup capacitor needs a few hours of charging to reach full capacity). Compare to the correct time. If the clock is speeding or is halted, proceed to section 1.3.

10.3 The clock is speeding or doesn't change.

Open the phone and check if the crystal B600 is correctly soldered.

- If it is then replace B600, C690 and C691 (all of them class A). **NOTE!** The values of C690 and C691 varies depending on the version of the D600, see the spare part list.

All components are shown on fig 1.3. Assemble the phone and compare to the correct time.

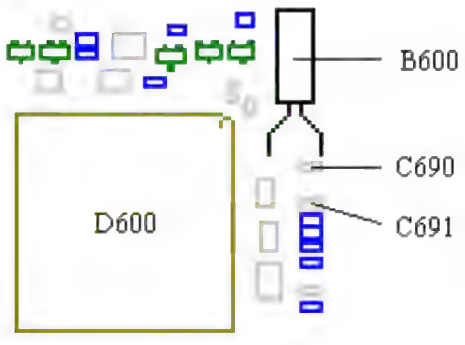


Fig. 10.3

11 Component lists

11.1 Explanation

11.1.1 Mounting drawing table

The Mounting drawings show the components placements (Pos) at the printed board. The Mounting drawings are not included in this document.

11.1.2 Component list

Position:
The components position number at the board.

Designation:
Description of the component.

Part No.:
The components part number, or reference to Revision Change table.

Note:
Functions that are affected if the component is replaced. The specified verification should be paid extra attention when testing the telephone.

11.1.3 Revision change table

If there are multiple part numbers for a position, the tables specifies which one to use for different boards or board revision.

11.2 Mounting drawing tables

GH688

Board part nr	2/ROA 117 3307/1	R1A - R1C	R2A - R3B.				
	2/ROA 117 3307/3			R3A - R3C			
	2/ROA 117 3307/4				R4A		
	2/ROA 117 3307/5			R3B			
	2/ROA 117 3307/6			R3B - R3C		R4A	R4B
Mounting drawing	1078-2/ROA 117 3307/1	Rev D	Rev E	RevF	Rev J		
	1078-2/ROA 117 3307/6					Rev A	Rev B

GA628

Board part nr	2/ROA 117 3308/1	R1A - R1D	R2A - R2B.	R3A - R3B			
	2/ROA 117 3308/2		R2B	R3A - R3B			
	2/ROA 117 3308/3			R3A - R3B			
	2/ROA 117 3308/4			R3A - R3B	R4A - R4B	R5A - R5B	R5C
	2/ROA 117 3308/5				R4B - R4C	R5A - R5B	R5C
	2/ROA 117 3308/7			R3B			
Mounting drawing	1078-2/ROA 117 3307/1	Rev D					
	1078-2/ROA 117 3308/1		Rev A	Rev B	Rev E		
	1078-2/ROA 117 3308/4					Rev A	Rev B

11.3 Component list GH688

2/ROA 117 3307/1, 2/ROA 117 3307/3, 2/ROA 117 3307/4, 2/ROA 117 3307/5, 2/ROA 117 3307/6

			GH688
Pos	**Designation**	**Part No.**	**Note**
B600	QUARTZ CRYS-TAL	RTM 501 661/01	Verify Real Time Clock function
C100	CAPACITOR	RJC 463 3022/33	
C101	CAPACITOR	RJC 463 3022/33	
C102	CAPACITOR	RJC 463 3022/33	
C103	CAPACITOR	RJC 463 3022/33	
C108-C110	Not mounted	Not mounted	
C111	CAPACITOR	RJC 463 3022/33	
C112	CAPACITOR	See revision change table	
C113	CAPACITOR	RJC 463 3022/33	
C114	CAPACITOR	RJC 463 3022/33	
C115	CAPACITOR	RJC 463 3022/33	
C116-C124	Not mounted	Not mounted	
C125	CAPACITOR	RJC 463 3022/33	
C126	CAPACITOR	RJC 463 3022/33	
C127	CAPACITOR	RJC 463 3022/33	
C128	CAPACITOR	RJC 463 3022/33	
C129	CAPACITOR	RJC 463 3022/33	
C130	CAPACITOR	RJC 463 3022/33	
C131	CAPACITOR	RJC 463 3022/33	
C132	Not mounted	Not mounted	
C134	CAPACITOR	RJC 463 3022/33	
C201	CAPACITOR	RJC 464 3025/1	
C202	CAPACITOR	RJC 463 3022/33	
C203	CAPACITOR	RJC 463 3022/33	
C204	CAPACITOR	RJC 464 3025/1	
C213	CAPACITOR	RJC 463 3022/33	
C214	CAPACITOR	RJC 463 3022/33	
C221	CAPACITOR	RJC 463 3022/33	
C222	CAPACITOR	RJC 463 3022/33	

			GH688
Pos	**Designation**	**Part No.**	**Note**
C223	CAPACITOR	RJC 463 3022/33	
C224	CAPACITOR	RJC 463 3021/1	
C225	CAPACITOR	RJC 463 3021/1	
C226	CAPACITOR	RJC 463 3022/33	
C227	CAPACITOR	RJC 463 3021/33	
C230	CAPACITOR	RJC 464 3024/1	
C231	CAPACITOR	RJC 464 3024/1	
C234	CAPACITOR	RJC 463 3022/33	
C235	CAPACITOR	RJC 463 3022/33	
C250	CAPACITOR	RJC 464 3024/1	
C251	CAPACITOR	RJC 464 3024/1	
C252	CAPACITOR	RJC 463 3021/27	
C254	CAPACITOR	RJC 464 3024/1	
C255	CAPACITOR	RJC 464 3024/1	
C300	CAPACITOR	RJC 496 2047/1	
C301	CAPACITOR	RJC 464 3024/1	
C302	CAPACITOR	RJC 464 3024/1	
C310	CAPACITOR	RJC 464 3025/1	
C311	CAPACITOR	RJC 463 3022/33	
C350	CAPACITOR	RJC 464 3025/1	
C351	CAPACITOR	RJC 464 3025/1	
C352	CAPACITOR	RJC 463 3022/56	
C353	CAPACITOR	RJC 463 3022/33	
C355	CAPACITOR	RJC 463 3022/33	
C356	CAPACITOR	RJC 496 2047/1	
C357	CAPACITOR	RJC 496 2047/1	
C358	CAPACITOR	RJC 463 3022/33	
C359	CAPACITOR	RJA 532 4054/33	
C360	CAPACITOR	RJC 463 3023/1	
C361	CAPACITOR	RJC 463 3023/12	
C370	CAPACITOR	RJC 463 3022/33	
C371	CAPACITOR	RJC 463 3022/33	
C400	CAPACITOR	RJC 463 3022/33	
C401	CAPACITOR	RJC 463 3022/33	
C402	CAPACITOR	RJC 463 3022/33	
C403	CAPACITOR	RJE 340 1168/33	
C404	CAPACITOR	RJC 464 3025/1	

			GH688
Pos	**Designation**	**Part No.**	**Note**
C405	CAPACITOR	RJC 463 3021/39	
C406	CAPACITOR	RJC 463 3022/33	
C407-C409	CAPACITOR	See revision change table	
C421	CAPACITOR	RJC 463 3022/33	
C422	CAPACITOR	See revision change table	
C423	CAPACITOR	RJC 463 3022/33	
C424	CAPACITOR	RJC 463 3022/33	
C425	CAPACITOR	RJC 463 3021/18	
C426	CAPACITOR	RJC 463 3022/33	
C428	CAPACITOR	RJC 463 3022/12	
C429-C430	CAPACITOR	See revision change table	
C435	Not mounted	Not mounted	
C450	CAPACITOR	RJC 464 3025/1	
C451	CAPACITOR	RJC 463 3022/33	
C452	CAPACITOR	RJC 464 3025/1	
C453	CAPACITOR	RJE 599 1167/33	
C454	CAPACITOR	RJE 599 1167/33	
C455	Not mounted	Not mounted	
C456	CAPACITOR	RJC 464 3025/1	
C457	CAPACITOR	See revision change table	
C458	CAPACITOR	RJC 463 3022/47	
C459	CAPACITOR	RJC 464 3024/82	
C460-C461	CAPACITOR	See revision change table	
C462	CAPACITOR	RJA 532 4054/33	
C463	CAPACITOR	RJC 464 3025/1	
C464	CAPACITOR	RJC 464 3035/22	
C465	CAPACITOR	RJC 464 3025/1	
C468	CAPACITOR	RJC 496 2047/1	
C470	CAPACITOR	RJC 496 2047/1	Verify charging function
C501	CAPACITOR	RJC 464 3025/1	
C502	CAPACITOR	RJC 464 3025/1	
C503	CAPACITOR	RJC 464 3025/1	
C505	CAPACITOR	RJC 464 3036/1	
C507	CAPACITOR	RJC 464 3025/1	
C509	CAPACITOR	RJC 464 3035/82	
C510	CAPACITOR	See revision change table	
C511	CAPACITOR	RJC 463 3022/68	

			GH688
Pos	**Designation**	**Part No.**	**Note**
C513	CAPACITOR	RJC 464 3024/1	
C518	CAPACITOR	RJC 464 3025/1	
C530	CAPACITOR	RJC 463 3022/56	
C540	CAPACITOR	RJC 464 3025/1	
C541	CAPACITOR	RJC 464 3025/1	
C542	CAPACITOR	RJC 464 3025/1	
C543	CAPACITOR	RJC 464 3025/1	
C544	CAPACITOR	RJC 464 3025/1	
C545	CAPACITOR	RJC 464 3025/1	
C600	CAPACITOR	RJE 599 1108/1W	
C602-C606	CAPACITOR	See revision change table	
C608-C609	CAPACITOR	See revision change table	
C610	CAPACITOR	RJC 464 3035/68	
C611	CAPACITOR	RJC 464 3035/68	
C614	CAPACITOR	RJC 496 2047/1	
C615	CAPACITOR	See revision change table	Verify SIM function
C616	CAPACITOR	See revision change table	Verify flash function
C623	Not mounted	Not mounted	
C625	CAPACITOR	See revision change table	
C626	CAPACITOR	RJC 464 3035/68	Verify SIM function
C627	CAPACITOR	RJC 463 3022/22	Verify SIM function
C628	CAPACITOR	RJC 463 3022/22	Verify SIM function
C629	CAPACITOR	See revision change table	Verify SIM function
C630	CAPACITOR	RJC 463 3022/22	Verify SIM function
C631	Not mounted	Not mounted	
C632	CAPACITOR	RJC 463 3023/1	Verify display function
C633	CAPACITOR	RJC 464 3035/68	Verify display function
C634	CAPACITOR	RJC 463 3023/1	Verify display function
C635	CAPACITOR	RJC 464 3035/68	Verify SIM function
C636	CAPACITOR	RJC 463 3023/1	Verify display function
C637	CAPACITOR	RJC 463 3022/33	
C638	CAPACITOR	RJC 463 3022/33	
C639	Not mounted	Not mounted	
C642	CAPACITOR	RJC 464 3035/68	
C643-C644	CAPACITOR	See revision change table	
C645-C646	CAPACITOR	Not mounted	
C647	CAPACITOR	See revision change table	

			GH688
Pos	**Designation**	**Part No.**	**Note**
C648	CAPACITOR	Not mounted	
C650	CAPACITOR	RJC 463 3022/33	Verify handsfree earphone function
C651	CAPACITOR	RJC 463 3022/33	Verify handsfree mic function
C652	CAPACITOR	See revision change table	
C656-C659	Not mounted	Not mounted	
C660	CAPACITOR	RJC 463 3022/33	Verify charging function
C661	Not mounted	Not mounted	
C662	CAPACITOR	See revision change table	Verify flash function
C663	CAPACITOR	RJC 464 3024/1	Verify handsfree mic function
C664	CAPACITOR	RJC 464 3025/1	Verify handsfree earphone function
C665	CAPACITOR	See revision change table	
C666	Not mounted	Not mounted	
C667	CAPACITOR	RJC 464 3025/1	Verify charging function
C668	CAPACITOR	RJC 464 3035/68	Verify display function
C669	Not mounted	Not mounted	
C670	CAPACITOR	RJC 463 3022/33	
C671	CAPACITOR	RJC 463 3022/33	
C672	Not mounted	Not mounted	
C674	Not mounted	Not mounted	
C677-C679	Not mounted	Not mounted	
C680	CAPACITOR	RJC 464 3023/33	
C681-C683	Not mounted	Not mounted	
C690-C691	CAPACITOR	See revision change table	Verify Real Time Clock function
C692	CAPACITOR	RJC 464 3035/68	Verify Real Time Clock function
C701	CAPACITOR	See revision change table	
C707	CAPACITOR	RJE 599 2107/47A	Verify SIM function
C708	CAPACITOR	RJC 464 3036/1	Verify SIM function
C709	CAPACITOR	RJC 464 3036/1	Verify SIM function
C710	CAPACITOR	RJC 464 3035/68	
C711	CAPACITOR	See revision change table	
C716	CAPACITOR	RJC 464 3047/1	Verify SIM function
C719	CAPACITOR	RJE 599 1167/1	Verify Real Time Clock function
C720	CAPACITOR	RJE 323 1256/6	Verify Real Time Clock function
C721	CAPACITOR	RJC 464 3035/68	Verify Real Time Clock function
C730	CAPACITOR	See revision change table	

			GH688
Pos	**Designation**	**Part No.**	**Note**
C802-C808	CAPACITOR	See revision change table	
C810	CAPACITOR	RJC 464 3035/33	Verify handsfree mic function
C812	CAPACITOR	RJC 464 3035/68	Verify handsfree mic function
C813	CAPACITOR	RJE 599 2107/15	Verify handsfree earphone function
C814	CAPACITOR	RJE 599 2107/47A	Verify mic function
C815	CAPACITOR	RJC 463 3022/33	Verify mic function
C816	CAPACITOR	RJC 463 3022/33	Verify mic function
C817	CAPACITOR	RJC 463 3022/33	Verify handsfree mic function
C818	CAPACITOR	RJC 464 3035/68	Verify mic function
C819	CAPACITOR	RJC 464 3035/68	Verify mic function
C820	CAPACITOR	RJC 463 3022/33	Verify mic function
C824	CAPACITOR	RJC 464 3025/1	Verify display function
C826	CAPACITOR	RJA 532 4055/12	
C828	Not mounted	Not mounted	
C829	CAPACITOR	RJC 463 3022/33	Verify mic function
C830	CAPACITOR	RJC 463 3022/33	Verify mic function
C833	CAPACITOR	RJC 464 3035/68	
C835	CAPACITOR	RJE 599 2107/47A	Verify handsfree mic function
C840	CAPACITOR	RJC 463 3022/33	Verify earphone function
C841	CAPACITOR	RJC 463 3022/33	Verify earphone function
C842	Not mounted	Not mounted	
C850	CAPACITOR	RJC 464 3035/68	Verify mic function
C851	CAPACITOR	RJC 464 3035/68	Verify mic function
C853	CAPACITOR	RJC 464 3035/68	
C854	Not mounted	Not mounted	
C900	CAPACITOR	RJE 599 1108/1W	
C902-C907	CAPACITOR	See revision change table	
C910	Not mounted	Not mounted	
D600	MICROCIRCUIT	See revision change table	
D610	MICROCIRCUIT	RYT 118 6061/1	
D620	MICROCIRCUIT	RYT 119 6047/1	
D900	FUNCTIONAL CIRCUIT	See revision change table	
E201	SHIELDING POT	SXA 120 1194/4	
F601	VARISTOR	See revision change table	Verify handsfree earphone function
F602	Not mounted	Not mounted	

			GH688
Pos	**Designation**	**Part No.**	**Note**
F603	VARISTOR	See revision change table	Verify portable handsfree function
F604	VARISTOR	See revision change table	Verify vehicle handsfree function
F605	VARISTOR	See revision change table	Verify flash function
H600	BUZZER	KLJ 107 08/2	
H622	Not mounted	Not mounted	
H624	Not mounted	Not mounted	
H650	LIGHT EMITTING DIODE	RKZ 433 613/1	Verify red/green top indicator
H651-H654	LIGHT EMITTING DIODE	RKZ 433 641/4	Verify Illumination function
H655-H660	LIGHT EMITTING DIODE	RKZ 433 634/4	Verify Illumination function
J603	COMPONENT HOLDER	RNK 860 23/04	
J810	CONNECTOR2	SXA 120 1210	
L213	CHOKE	REG 704 4742/12T	
L220	INDUCTOR	REG 704 4731/56	
L230	INDUCTOR	REG 704 9542/22	
L250	CHOKE	REG 704 2153/15	
L251	CHOKE	REG 704 2153/15	
L252	INDUCTOR	REG 704 273/33	
L300	FILTER	REG 706 06/1	
L350	INDUCTOR	REG 704 274/22	
L351	FILTER	REG 706 06/1	
L400	CHOKE	REG 704 212/27	
L401	TRANSFORMER	REG 704 23/28	
L402	FILTER	REG 706 06/1	
L451	FILTER	REG 706 06/1	
L501	FILTER	REG 706 06/1	
L503	INDUCTOR	See revision change table	
L602-L606	See revision change table	See revision change table	
L607	Not mounted	Not mounted	
L608	Not mounted	See revision change table	
L626	Not mounted	See revision change table	
L854	Not mounted	See revision change table	
L910	Not mounted	See revision change table	

			GH688
Pos	**Designation**	**Part No.**	**Note**
N350	MICROCIRCUIT	RYT 102 6054/1	
N450	MICROCIRCUIT	RYT 113 6072/2	
N701	MICROCIRCUIT	RYT 113 6095/1	
N702	MICROCIRCUIT	RYT 113 6095/1	
N705	MICROCIRCUIT	RYT 113 048/C	
N706	MICROCIRCUIT	RYT 113 6071/5	Verify Real Time Clock function
R220	RESISTOR	REP 622 454/47	
R221	RESISTOR	REP 622 455/1	
R222	RESISTOR	REP 622 453/27	
R224	RESISTOR	REP 622 453/33	
R225	RESISTOR	REP 622 453/33	
R226	RESISTOR	REP 622 453/33	
R227	RESISTOR	REP 622 452/82	
R230	RESISTOR	REP 622 453/27	
R241	RESISTOR	REP 622 453/56	
R242	RESISTOR	REP 622 453/56	
R243	RESISTOR	See revision change table	
R250	RESISTOR	REP 622 653/68	
R301	RESISTOR	REP 622 454/22	
R316	RESISTOR	REP 622 453/27	
R317	RESISTOR	REP 622 452/56	
R351	RESISTOR	REP 622 452/1	
R352	RESISTOR	REP 622 452/1	
R356	RESISTOR	REP 622 455/12	
R357	RESISTOR	REP 622 455/22	
R358	RESISTOR	REP 622 455/22	
R359	RESISTOR	REP 622 452/47	
R400-R401	RESISTOR	See revision change table	
R402	RESISTOR	See revision change table	
R420	RESISTOR	REP 622 454/56	
R421	RESISTOR	REP 622 456/1	
R422	RESISTOR	REP 622 456/1	
R423	RESISTOR	REP 622 454/56	
R424	RESISTOR	REP 622 452/47	
R429	RESISTOR	See revision change table	
R450	Not mounted	Not mounted	
R451	THERMISTOR	See revision change table	

			GH688
Pos	**Designation**	**Part No.**	**Note**
R452	RESISTOR	REP 622 456/1	
R453	RESISTOR	REP 622 454/27	
R454	RESISTOR	See revision change table	
R455	RESISTOR	REP 622 451/22	
R456	RESISTOR	REP 622 455/33	Verify charging function
R460	RESISTOR	REP 622 457/1	
R464	RESISTOR	REP 622 455/1	Verify charging function
R465	Not mounted	Not mounted	
R466	RESISTOR	REP 622 001/0	
R467	RESISTOR	REP 645 623/39	Verify charging function
R468	RESISTOR	REP 645 620/1	Verify charging function
R469	RESISTOR	REP 622 455/15	
R470	RESISTOR	REP 622 456/1	Verify charging function
R471	RESISTOR	REP 622 455/33	Verify charging function
R501	RESISTOR	REP 622 452/12	
R502	RESISTOR	REP 622 453/47	
R520-R521	RESISTOR	See revision change table	
R522	Not mounted	Not mounted	
R600	RESISTOR	REP 622 452/33	Verify SIM function
R601	RESISTOR	REP 622 454/1	Verify portable handsfree function
R602	RESISTOR	REP 622 453/47	Verify vehicle handsfree function
R604	RESISTOR	REP 622 455/22	Verify flash function
R605	RESISTOR	REP 622 454/1	Verify vehicle handsfree function
R606	RESISTOR	REP 622 001/0	
R607	RESISTOR	REP 622 454/1	Verify Illumination function
R608	RESISTOR	REP 622 454/15	Verify Illumination function
R609	Not mounted	Not mounted	
R610	RESISTOR	REP 622 452/27	Verify Illumination function
R611	RESISTOR	REP 622 452/47	Verify Illumination function
R612	RESISTOR	See revision change table	
R613	RESISTOR	REP 622 455/1	
R614	Not mounted	Not mounted	
R616	RESISTOR	REP 622 456/1	Verify display function
R617	RESISTOR	REP 622 455/15	Verify SIM function
R618	RESISTOR	REP 622 456/1	Verify SIM function
R619	RESISTOR	REP 622 454/22	

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Pos	**Designation**	**Part No.**	**Note**
R620	RESISTOR	REP 622 454/22	
R621	RESISTOR	REP 622 455/1	
R622	RESISTOR	REP 622 454/1	Verify flash function
R623	RESISTOR	See revision change table	Verify SIM function
R625	RESISTOR	REP 622 453/47	Verify flash function
R627	RESISTOR	See revision change table	
R628	RESISTOR	REP 622 452/33	Verify SIM function
R629	RESISTOR	REP 622 456/1	
R630	RESISTOR	REP 622 456/1	Verify keyboard function
R631	RESISTOR	REP 622 456/1	Verify keyboard function
R632	RESISTOR	REP 622 456/1	Verify keyboard function
R633	RESISTOR	REP 622 456/1	Verify keyboard function
R634	RESISTOR	REP 622 456/1	Verify keyboard function
R635	RESISTOR	REP 622 455/22	Verify vehicle handsfree function
R636	RESISTOR	REP 622 455/22	Verify portable handsfree function
R639	RESISTOR	REP 622 456/1	Verify display function
R646	RESISTOR	REP 622 453/33	
R647	RESISTOR	REP 622 453/33	
R648	Not mounted	Not mounted	
R650	RESISTOR	REP 622 456/1	Verify flash function
R651	RESISTOR	REP 622 454/1	
R652	RESISTOR	REP 622 451/47	
R653	RESISTOR	REP 624 652/1	
R660	RESISTOR	REP 622 001/0	Verify keyboard function
R661	RESISTOR	REP 622 001/0	Verify keyboard function
R662	Not mounted	Not mounted	
R663	Not mounted	Not mounted	
R664	RESISTOR	See revision change table	
R666	RESISTOR	See revision change table	
R668	RESISTOR	REP 622 455/1	Verify display function
R669	RESISTOR	REP 622 455/1	Verify display function
R673	Not mounted	Not mounted	
R674	RESISTOR	See revision change table	Verify display function
R678	Not mounted	Not mounted	
R679	Not mounted	Not mounted	
R700	RESISTOR	REP 622 456/1	Verify On/Off-function

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Pos	**Designation**	**Part No.**	**Note**
R703	RESISTOR	See revision change table	
R704	RESISTOR	REP 622 456/1	Verify SIM function
R707	RESISTOR	See revision change table	
R708	RESISTOR	See revision change table	Verify On/Off-function
R709	RESISTOR	See revision change table	
R716	RESISTOR	REP 622 451/47	Verify SIM function
R719	RESISTOR	REP 622 455/47	Verify Real Time Clock function
R720	RESISTOR	REP 622 456/18	Verify Real Time Clock function
R721	Not mounted	Not mounted	
R724	RESISTOR	REP 624 652/47	Verify vehicle handsfree function
R725	RESISTOR	REP 622 456/1	
R802	RESISTOR	REP 622 654/39	Verify handsfree mic function
R803	RESISTOR	REP 622 653/1	Verify handsfree earphone function
R804	RESISTOR	REP 622 456/1	Verify handsfree earphone function
R805	RESISTOR	REP 622 655/15	Verify handsfree mic function
R807	RESISTOR	REP 622 656/1	Verify display function
R808	RESISTOR	REP 622 655/33	Verify display function
R812	RESISTOR	REP 622 654/15	Verify mic function
R813	Not mounted	Not mounted	
R814	RESISTOR	REP 622 453/47	Verify mic function
R815	RESISTOR	REP 622 656/1	
R817	RESISTOR	See revision change table	Verify mic function
R818	RESISTOR	REP 622 455/22	Verify mic function
R819	RESISTOR	See revision change table	Verify mic function
R820	RESISTOR	REP 622 654/15	Verify mic function
R822	RESISTOR	REP 622 456/1	
R823	RESISTOR	REP 622 456/1	
R825	RESISTOR	REP 622 654/33	Verify handsfree mic function
R830	RESISTOR	REP 622 453/47	Verify handsfree mic function
R831	RESISTOR	See revision change table	
R833	Not mounted	Not mounted	
R834	RESISTOR	See revision change table	
R900	RESISTOR	REP 622 455/1	
R901	RESISTOR	REP 622 455/1	
R902	RESISTOR	REP 622 455/1	

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Pos	**Designation**	**Part No.**	**Note**
R903	RESISTOR	REP 622 455/1	
R904	RESISTOR	REP 622 454/1	
R905	RESISTOR	REP 622 455/1	
R906	Not mounted	Not mounted	
R907	RESISTOR	REP 622 456/1	
R908	RESISTOR	REP 622 456/1	
R909	RESISTOR	REP 622 456/1	
R910	Not mounted	Not mounted	
U201	TRANSFORMER	REG 704 109/1	
V220	TRANSISTOR	RYN 121 1606/1	
V300	TRANSISTOR	RYN 901 603/1	
V301	TRANSISTOR	RYN 120 629/2	
V302	TRANSISTOR	RYN 121 6069/1	
V350	TRANSISTOR	RYN 121 6069/1	
V351	TRANSISTOR	RYN 120 629/2	
V400	TRANSISTOR	RYN 121 6070/1	
V401	TRANSISTOR	RYN 121 6070/1	
V402	DIODE	RKZ 323 650/1	
V403	DIODE	RKZ 323 650/1	
V404-V405	DIODE	See revision change table	
V450	TRANSISTOR	RYN 120 629/2	
V451	TRANSISTOR	RYN 120 629/2	
V452	TRANSISTOR	RYN 120 629/2	
V453	TRANSISTOR	RYN 122 654/1	Verify charging function
V454	TRANSISTOR	RYN 121 6069/1	
V502	Not mounted	Not mounted	
V605	DIODE	RKZ 123 647/1	
V606	TRANSISTOR	RYN 121 6086/1	
V607	TRANSISTOR	RYN 121 6069/1	Verify flash function
V608	DIODE	RKZ 123 646/1	Verify display function
V609	DIODE	See revision change table	Verify SIM function
V611	DIODE	RKZ 123 646/1	Verify display function
V613	TRANSISTOR	RYN 121 6086/1	Verify Illumination function
V614	TRANSISTOR	RYN 121 6086/1	Verify Illumination function
V615	Not mounted	Not mounted	
V673	Not mounted	Not mounted	
V700	TRANSISTOR	RYN 122 625/1	Verify SIM function

			GH688
Pos	**Designation**	**Part No.**	**Note**
V701	TRANSISTOR	RYN 121 6069/1	Verify On/Off-function
V702	DIODE	RKZ 123 647/1	Verify On/Off-function
V704	TRANSISTOR	RYN 120 647/1	Verify On/Off-function
V705	TRANSISTOR	RYN 120 647/1	Verify SIM function
V706	TRANSISTOR	RYN 121 6086/1	
V708-V709	TRANSISTOR	See revision change table	
V711	DIODE	RKZ 123 647/1	Verify Real Time Clock function
V805	DIODE	RKZ 123 646/2	Verify mic function
V806	DIODE	See revision change table	
X401	CONTACT HOUS-ING	SXA 120 981	
Z200	SAW-FILTER	RTN 201 782/01	
Z201	SAW-FILTER	RTN 202 780/01	
Z400	FILTER	RTN 202 799/01	
Z500	FILTER	RTN 202 743/01	
Z501	FILTER	RTN 202 743/02	
Z502	FILTER	RTN 202 743/03	

11.3.1 Revision change tables GH688

Revision change table for 2/ROA 117 3307/1 and 2/ROA 117 3307/5 2/ROA 117 3307/3

	2/ROA 1173307/1	2/ROA 1173307/5
Pos	Revisions	Part number
C112	Up to R2A	RJC 463 3022/33
C112	R2B and higher	RJC 464 3024/1
C407	Up to R1C	Not mounted
C407	R2A and higher	RJC 463 3021/56
C408	Up to R1C	Not mounted
C408	R2A and higher	RJC 463 3021/27
C409	Up to R1C	Not mounted
C409	R2A and higher	RJC 463 3021/39
C422	Up to R1C	RJC 463 3021/15
C422	R2A and higher	RJC 463 3020/82
C429	All revisions	Not mounted
C430	All revisions	Not mounted
C457	Up to R1C	RJE 599 1167/33
C457	R2A and higher	RJE 599 1107/47
C460	R1A	RJC 464 3023/56
C460	R1B and higher	RJC 464 3023/68
C461	R1A	RJC 464 3023/47
C461	R1B and higher	RJC 464 3023/56
C510	Up to R3A	RJC 464 3023/47
C510	R3B	Not mounted
C602	All revisions	RJC 464 3035/68
C603	All revisions	RJC 464 3035/68
C604	All revisions	RJC 464 3035/68
C605	All revisions	RJC 464 3035/68
C606	All revisions	RJC 464 3035/68
C608	All revisions	RJC 464 3035/68
C609	All revisions	RJC 464 3035/68
C615	All revisions	Not mounted
C616	Up to R2B	RJC 464 3035/68
C616	R3A and higher	RJC 496 2047/1
C625	All revisions	Not mounted

	2/ROA 1173307/3	
Pos	Revisions	Part number
C112	All revisions	RJC 464 3024/1
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	All revisions	Not mounted
C430	All revisions	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	All revisions	Not mounted
C602	All revisions	RJC 464 3035/68
C603	All revisions	RJC 464 3035/68
C604	All revisions	RJC 464 3035/68
C605	All revisions	RJC 464 3035/68
C606	All revisions	RJC 464 3035/68
C608	All revisions	RJC 464 3035/68
C609	All revisions	RJC 464 3035/68
C615	All revisions	Not mounted
C616	All revisions	RJC 496 2047/1
C625	All revisions	Not mounted

	2/ROA 1173307/1	2/ROA 1173307/5
Pos	**Revisions**	**Part number**
C629	All revisions	RJC 463 3022/22
C643	All revisions	Not mounted
C644	All revisions	Not mounted
C647	All revisions	Not mounted
C652	All revisions	RJC 463 3022/33
C662	Up to R2B	Not mounted
C662	R3A and higher	RJC 496 2047/1
C665	All revisions	RJC 464 3035/68
C690	Up to R2A, R3B	RJC 463 3022/12
C690	R2B, R3A	RJC 463 3022/18 When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12
C691	Up to R2A, R3B	RJC 463 3022/12
C691	R2B, R3A	RJC 463 3022/18 When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12
C701	All revisions	Not mounted
C711	All revisions	RJC 464 3024/12
C730	All revisions	RJC 464 3047/1
C802	All revisions	RJC 464 3035/68
C803	All revisions	RJC 464 3035/68
C804	All revisions	RJC 464 3035/68
C805	All revisions	RJC 464 3035/68
C806	All revisions	RJC 464 3035/68
C807	All revisions	RJC 464 3035/68
C808	All revisions	Not mounted
C902	All revisions	RJC 464 3035/68
C903	All revisions	RJC 464 3035/68
C904	All revisions	RJC 464 3035/68
C905	All revisions	RJC 464 3035/68
C906	All revisions	RJC 464 3035/68
C907	All revisions	RJC 464 3035/68

	2/ROA 1173307/3	
Pos	**Revisions**	**Part number**
C629	All revisions	RJC 463 3022/22
C643	All revisions	Not mounted
C644	All revisions	Not mounted
C647	All revisions	Not mounted
C652	All revisions	RJC 463 3022/33
C662	All revisions	RJC 496 2047/1
C665	All revisions	RJC 464 3035/68
C690	R3B and higher	RJC 463 3022/12
C690	Up to R3A	RJC 463 3022/18 When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12
C691	R3B and higher	RJC 463 3022/12
C691	Up to R3A	RJC 463 3022/18 When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12
C701	All revisions	Not mounted
C711	All revisions	RJC 464 3024/12
C730	All revisions	RJC 464 3047/1
C802	All revisions	RJC 464 3035/68
C803	All revisions	RJC 464 3035/68
C804	All revisions	RJC 464 3035/68
C805	All revisions	RJC 464 3035/68
C806	All revisions	RJC 464 3035/68
C807	All revisions	RJC 464 3035/68
C808	All revisions	Not mounted
C902	All revisions	RJC 464 3035/68
C903	All revisions	RJC 464 3035/68
C904	All revisions	RJC 464 3035/68
C905	All revisions	RJC 464 3035/68
C906	All revisions	RJC 464 3035/68
C907	All revisions	RJC 464 3035/68

	2/ROA 1173307/1	2/ROA 1173307/5
Pos	**Revisions**	**Part number**
D600	All revisions When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12	ROP 101 678/2C R2A
D900	All revision	RYS 105 625/2C R4A
F601	Up to R1C	Not mounted
F601	R2A and higher	REY 203 08/1
F603	Up to R2B	Not mounted
F603	R3A and higher	REY 203 08/1
F604	Up to R2B	Not mounted
F604	R3A and higher	REY 203 08/1
F605	Up to R2B	Not mounted
F605	R3A and higher	REY 203 08/1
L503	R1A	REG 704 274/22
L503	R1B and higher	REG 704 274/27
L602	All revisions	Not mounted
L603	All revisions	Not mounted
L604	All revisions	Not mounted
L605	All revisions	Not mounted
L606	All revisions	Not mounted
L608	All revisions	Not mounted
L626	All revisions	Not mounted
L854	All revisions	Not mounted
L910	All revisions	Not mounted
R243	Up to R3A	REP 622 453/22
R243	R3B	REP 622 453/18
R400	Up to R3A	REP 622 452/39
R400	R3B	REP 622 452/47
R401	Up to R3A	REP 622 453/33
R401	R3B	REP 622 453/22
R402	Up to R3A	REP 622 453/15
R402	R3B	REP 622 453/12
R429	All revisions	Not mounted
R451	Up to R3A	REZ 401 055/1

	2/ROA 1173307/3	
Pos	**Revisions**	**Part number**
D600	All revisions When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12	ROP 101 678/2C R2A
D900	All revision	RYS 105 625/2C R4A
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1
F604	All revisions	REY 203 08/1
F605	All revisions	REY 203 08/1
F605	R3C	REY 203 08/1
L503	All revisions	REG 704 274/27
L602	All revisions	Not mounted
L603	All revisions	Not mounted
L604	All revisions	Not mounted
L605	All revisions	Not mounted
L606	All revisions	Not mounted
L608	All revisions	Not mounted
L626	All revisions	Not mounted
L854	All revisions	Not mounted
L910	All revisions	Not mounted
R243	Up to R3A	REP 622 453/22
R243	R3B and higher	REP 622 453/18
R400	Up to R3A	REP 622 452/39
R400	R3B and higher	REP 622 452/47
R401	Up to R3A	REP 622 453/33
R401	R3B and higher	REP 622 453/22
R402	Up to R3A	REP 622 453/15
R402	R3B and higher	REP 622 453/12
R429	All revisions	Not mounted
R451	All revisions	REZ 401 0054/47

	2/ROA 1173307/1	2/ROA 1173307/5
Pos	Revisions	Part number
R451	R3B	REZ 401 0054/47
R454	Up to R1C	REP 622 001/0
R454	R2A and higher	Not mounted
R520	Up to R3A	REP 622 001/0
R520	R3B	Not mounted
R521	Up to R3A	Not mounted
R521	R3B	REP 622 455/18
R612	All revisions	REP 622 001/0
R623	Up to R2B	Not mounted
R623	R3A and higher	REP 622 001/0
R627	All revisions	REP 622 001/0
R664	All revisions	REP 622 001/0
R666	All revisions	REP 622 001/0
R674	All revisions	Not mounted
R703	All revisions	REP 622 001/0
R707	All revisions	REP 622 001/0
R708	All revisions	REP 622 456/1
R709	All revisions	REP 622 454/47
R817	Up to R2B	Not mounted
R817	R3A and higher	REP 622 454/1
R819	Up to R2B	Not mounted
R819	R3A and higher	REP 622 454/1
R831	Up to R3A	REP 622 655/1
R831	R3B	REP 622 654/47
R834	All revisions	REP 622 455/1
V404	All revisions	Not mounted
V405	All revisions	Not mounted
V609	Up to R1C	Not mounted
V609	R2A and higher	RKZ 323 673/1
V708	All revisions	RYN 121 6069/1
V709	All revisions	RYN 121 6069/1
V806	Up to R1C	RKZ 123 646/2
V806	R2A and higher	Not mounted

	2/ROA 1173307/3	
Pos	Revisions	Part number
R454	All revisions	Not mounted
R520	Up to R3A	REP 622 001/0
R520	R3B and higher	Not mounted
R521	Up to R3A	Not mounted
R521	R3B and higher	REP 622 455/18
R612	All revisions	REP 622 001/0
R623	All revisions	REP 622 001/0
R627	All revisions	REP 622 001/0
R664	All revisions	REP 622 001/0
R666	All revisions	REP 622 001/0
R674	All revisions	Not mounted
R703	All revisions	REP 622 001/0
R707	All revisions	REP 622 001/0
R708	All revisions	REP 622 456/1
R709	All revisions	REP 622 454/47
R817	All revisions	REP 622 454/1
R819	All revisions	REP 622 454/1
R831	All revisions	REP 622 654/47
R834	All revisions	REP 622 455/1
V404	All revisions	Not mounted
V405	All revisions	Not mounted
V609	All revisions	RKZ 323 673/1
V708	All revisions	RYN 121 6069/1
V709	All revisions	RYN 121 6069/1
V806	All revisions	Not mounted

Revision change table for 2/ROA 117 3307/4 2/ROA 11 73307/6

		2/ROA 117 3307/4
Pos	**Revisions**	**Part number**
C112	All revisions	RJC 464 3024/1
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	All revisions	Not mounted
C430	All revisions	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	All revisions	Not mounted
C602	All revisions	RJC 464 3025/1
C603	All revisions	RJC 464 3025/1
C604	All revisions	RJC 464 3025/1
C605	All revisions	RJC 464 3025/1
C606	All revisions	RJC 464 3025/1
C608	All revisions	RJC 464 3025/1
C609	All revisions	RJC 464 3025/1
C615	All revisions	RJC 464 3035/68
C616	All revisions	RJC 496 2047/1
C625	All revisions	RJC 463 3022/22
C629	All revisions	Not mounted
C643	All revisions	RJC 464 3025/1

		2/ROA 117 3307/6
Pos	**Revisions**	**Part number**
C112	All revisions	RJC 464 3024/1
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	R4A	RJC 463 3022/33
C429	Other than R4A	Not mounted
C430	R4A	RJC 496 2367/47
C430	Other than R4A	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	Up to R3A	RJC 464 3023/47
C510	R3B and higher	Not mounted
C602	All revisions	RJC 464 3035/68
C603	All revisions	RJC 464 3035/68
C604	All revisions	RJC 464 3035/68
C605	All revisions	RJC 464 3035/68
C606	All revisions	RJC 464 3035/68
C608	All revisions	RJC 464 3035/68
C609	All revisions	RJC 464 3035/68
C615	All revisions	Not mounted
C616	All revisions	RJC 496 2047/1
C625	All revisions	Not mounted
C629	All revisions	RJC 463 3022/22
C643	All revisions	Not mounted

		2/ROA 117 3307/4
Pos	**Revisions**	**Part number**
C644	All revisions	RJC 464 3025/1
C647	All revisions	RJC 464 3025/1
C652	All revisions	Not mounted
C662	All revisions	RJC 496 2047/1
C665	All revisions	Not mounted
C690	All revisions	RJC 463 3022/18 When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12
C691	All revisions	RJC 463 3022/18 When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12
C701	All revisions	RJC 464 3025/1
C711	All revisions	Not mounted
C730	All revisions	Not mounted
C802	All revisions	RJC 464 3025/1
C803	All revisions	RJC 464 3025/1
C804	All revisions	RJC 464 3025/1
C805	All revisions	RJC 464 3025/1
C806	All revisions	RJC 464 3025/1
C807	All revisions	RJC 464 3025/1
C808	All revisions	RJC 464 3025/1
C902	All revisions	RJC 464 3025/1
C903	All revisions	RJC 464 3025/1
C904	All revisions	RJC 464 3025/1
C905	All revisions	RJC 464 3025/1
C906	All revisions	RJC 464 3025/1
C907	All revisions	RJC 464 3025/1
D600	All revisions When replacing D600 on revisions R2B, R3A and R4A, pos. C690 & C691 MUST be replaced with RJC 463 3022/12	ROP 101 678/2C R2A
D900	All revisions	RYS 105 627/C R1A

		2/ROA 117 3307/6
Pos	**Revisions**	**Part number**
C644	All revisions	Not mounted
C647	All revisions	Not mounted
C652	All revisions	RJC 463 3022/33
C662	All revisions	RJC 496 2047/1
C665	All revisions	RJC 464 3035/68
C690	All revisions	RJC 463 3022/12
C691	All revisions	RJC 463 3022/12
C701	All revisions	Not mounted
C711	All revisions	RJC 464 3024/12
C730	All revisions	RJC 464 3047/1
C802	All revisions	RJC 464 3035/68
C803	All revisions	RJC 464 3035/68
C804	All revisions	RJC 464 3035/68
C805	All revisions	RJC 464 3035/68
C806	All revisions	RJC 464 3035/68
C807	All revisions	RJC 464 3035/68
C808	All revisions	Not mounted
C902	All revisions	RJC 464 3035/68
C903	All revisions	RJC 464 3035/68
C904	All revisions	RJC 464 3035/68
C905	All revisions	RJC 464 3035/68
C906	All revisions	RJC 464 3035/68
C907	All revisions	RJC 464 3035/68
D600	All revisions	ROP 101 678/2C R2A
D900	All revisions	RYS 105 627/C R1A

		2/ROA 117 3307/4
Pos	**Revisions**	**Part number**
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1
F604	All revisions	REY 203 08/1
F605	All revisions	REY 203 08/1
L503	All revisions	REG 704 274/27
L602	All revisions	REG 706 18/1
L603	All revisions	REG 706 18/1
L604	All revisions	REG 706 18/1
L605	All revisions	REG 706 18/1
L606	All revisions	REG 706 18/1
L608	All revisions	REG 706 18/1
L626	All revisions	REG 706 18/1
L854	All revisions	REG 706 18/1
L910	All revisions	REG 706 18/1
R243	All revisions	REP 622 453/18
R400	All revisions	REP 622 452/47
R401	All revisions	REP 622 453/22
R402	All revisions	REP 622 453/12
R429	All revisions	Not mounted
R451	All revisions	REZ 401 0054/47
R454	All revisions	Not mounted
R520	All revisions	Not mounted
R521	All revisions	REP 622 455/18
R612	All revisions	Not mounted
R623	All revisions	REP 622 001/0
R627	All revisions	Not mounted
R664	All revisions	Not mounted
R666	All revisions	Not mounted
R674	All revisions	REP 622 001/0
R703	All revisions	Not mounted
R707	All revisions	Not mounted
R708	All revisions	REP 622 654/33
R709	All revisions	Not mounted
R817	All revisions	REP 622 454/1
R819	All revisions	REP 622 454/1
R831	All revisions	REP 622 654/47

		2/ROA 117 3307/6
Pos	**Revisions**	**Part number**
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1
F604	All revisions	REY 203 08/1
F605	All revisions	REY 203 08/1
L503	All revisions	REG 704 274/27
L602	All revisions	Not mounted
L603	All revisions	Not mounted
L604	All revisions	Not mounted
L605	All revisions	Not mounted
L606	All revisions	Not mounted
L608	All revisions	Not mounted
L626	All revisions	Not mounted
L854	All revisions	Not mounted
L910	All revisions	Not mounted
R243	All revisions	REP 622 453/18
R400	All revisions	REP 622 452/47
R401	All revisions	REP 622 453/22
R402	All revisions	REP 622 453/12
R429	Up to R4A	Not mounted
R429	R4B	REP 622 001/0
R451	All revisions	REZ 401 0054/47
R454	All revisions	Not mounted
R520	All revisions	Not mounted
R521	All revisions	REP 622 455/18
R612	All revisions	REP 622 001/0
R623	All revisions	REP 622 001/0
R627	All revisions	REP 622 001/0
R664	All revisions	REP 622 001/0
R666	All revisions	REP 622 001/0
R674	All revisions	Not mounted
R703	All revisions	REP 622 001/0
R707	All revisions	REP 622 001/0
R708	All revisions	REP 622 456/1
R709	All revisions	REP 622 454/47
R817	All revisions	REP 622 454/1
R819	All revisions	REP 622 454/1
R831	All revisions	REP 622 654/47

		2/ROA 117 3307/4
Pos	**Revisions**	**Part number**
R834	All revisions	Not mounted
V404	All revisions	Not mounted
V405	All revisions	Not mounted
V609	All revisions	RKZ 323 673/1
V708	All revisions	Not mounted
V709	All revisions	Not mounted
V806	All revisions	Not mounted

		2/ROA 117 3307/6
Pos	**Revisions**	**Part number**
R834	All revisions	REP 622 455/1
V404	R4A	RKZ 323 650/1
V404	Other than R4A	Not mounted
V405	R4A	RKZ 323 650/1
V405	Other than R4A	Not mounted
V609	All revisions	RKZ 323 673/1
V708	All revisions	RYN 121 6069/1
V709	All revisions	RYN 121 6069/1
V806	All revisions	Not mounted

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2/ROA 117 3308/1, 2/ROA 117 3308/2, 2/ROA 117 3308/3 2/ROA 117 3308/4, 2/ROA 117 3308/5, 2/ROA 117 3308/7

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Pos	Designation	Product nuber	Note
C100	CAPACITOR	RJC 463 3022/33	
C101	CAPACITOR	RJC 463 3022/33	
C102	CAPACITOR	RJC 463 3022/33	
C103	CAPACITOR	RJC 463 3022/33	
C108-C110	Not mounted	Not mounted	
C111	CAPACITOR	RJC 463 3022/33	
C112	CAPACITOR	See revision change table	
C113	CAPACITOR	RJC 463 3022/33	
C114	CAPACITOR	RJC 463 3022/33	
C115	CAPACITOR	RJC 463 3022/33	
C116-C124	Not mounted	Not mounted	
C125-C131	CAPACITOR	RJC 463 3022/33	
C132	Not mounted	Not mounted	
C134	CAPACITOR	RJC 463 3022/33	
C201	CAPACITOR	RJC 464 3025/1	
C202	CAPACITOR	RJC 463 3022/33	
C203	CAPACITOR	RJC 463 3022/33	
C204	CAPACITOR	RJC 464 3025/1	
C213-C124	CAPACITOR	See revision change table	
C221-C123	CAPACITOR	RJC 463 3022/33	
C224	CAPACITOR	RJC 463 3021/1	
C225	CAPACITOR	RJC 463 3021/1	
C226	CAPACITOR	RJC 463 3022/33	
C227	CAPACITOR	RJC 463 3021/33	
C230	CAPACITOR	RJC 464 3024/1	
C231	CAPACITOR	RJC 464 3024/1	
C234	CAPACITOR	RJC 463 3022/33	
C235	CAPACITOR	RJC 463 3022/33	
C250	CAPACITOR	RJC 464 3024/1	
C251	CAPACITOR	RJC 464 3024/1	
C252	CAPACITOR	RJC 463 3021/27	
C254	CAPACITOR	RJC 464 3024/1	

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Pos	**Designation**	**Product nuber**	**Note**
C255	CAPACITOR	RJC 464 3024/1	
C300	CAPACITOR	RJC 496 2047/1	
C301	CAPACITOR	RJC 464 3024/1	
C302	CAPACITOR	RJC 464 3024/1	
C310	CAPACITOR	RJC 464 3025/1	
C311	CAPACITOR	RJC 463 3022/33	
C350	CAPACITOR	RJC 464 3025/1	
C351	CAPACITOR	RJC 464 3025/1	
C352	CAPACITOR	RJC 463 3022/56	
C353	CAPACITOR	RJC 463 3022/33	
C355	CAPACITOR	RJC 463 3022/33	
C356	CAPACITOR	RJC 496 2047/1	
C357	CAPACITOR	RJC 496 2047/1	
C358	CAPACITOR	RJC 463 3022/33	
C359	CAPACITOR	RJA 532 4054/33	
C360	CAPACITOR	RJC 463 3023/1	
C361	CAPACITOR	RJC 463 3023/12	
C370	CAPACITOR	RJC 463 3022/33	
C371	CAPACITOR	RJC 463 3022/33	
C400-C402	CAPACITOR	RJC 463 3022/33	
C403	CAPACITOR	RJE 340 1168/33	
C404	CAPACITOR	RJC 464 3025/1	
C405	CAPACITOR	RJC 463 3021/39	
C406	CAPACITOR	RJC 463 3022/33	
C407-C409	CAPACITOR	See revision change table	
C421	CAPACITOR	RJC 463 3022/33	
C422	CAPACITOR	See revision change table	
C423	CAPACITOR	RJC 463 3022/33	
C424	CAPACITOR	RJC 463 3022/33	
C425	CAPACITOR	RJC 463 3021/18	
C426	CAPACITOR	RJC 463 3022/33	
C428	CAPACITOR	RJC 463 3022/12	
C429-C430	CAPACITOR	See revision change table	
C435	Not mounted	Not mounted	
C450	CAPACITOR	RJC 464 3025/1	
C451	CAPACITOR	RJC 463 3022/33	
C452	CAPACITOR	RJC 464 3025/1	

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Pos	**Designation**	**Product nuber**	**Note**
C453	CAPACITOR	RJE 599 1167/33	
C454	CAPACITOR	RJE 599 1167/33	
C455	Not mounted	Not mounted	
C456	CAPACITOR	RJC 464 3025/1	
C457	CAPACITOR	See revision change table	
C458	CAPACITOR	RJC 463 3022/47	
C459	CAPACITOR	RJC 464 3024/82	
C460	CAPACITOR	See revision change table	
C461	CAPACITOR	See revision change table	
C462	CAPACITOR	RJA 532 4054/33	
C463	CAPACITOR	RJC 464 3025/1	
C464	CAPACITOR	RJC 464 3035/22	
C465	CAPACITOR	RJC 464 3025/1	
C468	CAPACITOR	RJC 496 2047/1	
C470	CAPACITOR	RJC 496 2047/1	Verify charging function
C501-C503	CAPACITOR	RJC 464 3025/1	
C505	CAPACITOR	RJC 464 3036/1	
C507	CAPACITOR	RJC 464 3025/1	
C509	CAPACITOR	RJC 464 3035/82	
C510	CAPACITOR	See revision change table	
C511	CAPACITOR	RJC 463 3022/68	
C513	CAPACITOR	RJC 464 3024/1	
C518	CAPACITOR	RJC 464 3025/1	
C530	CAPACITOR	RJC 463 3022/56	
C540	CAPACITOR	RJC 464 3025/1	
C541	CAPACITOR	RJC 464 3025/1	
C542	CAPACITOR	RJC 464 3025/1	
C543	CAPACITOR	RJC 464 3025/1	
C544	CAPACITOR	RJC 464 3025/1	
C545	CAPACITOR	RJC 464 3025/1	
C600	CAPACITOR	RJE 599 1108/1W	
C602-C606	CAPACITOR	See revision change table	
C608-C609	CAPACITOR	See revision change table	
C610	CAPACITOR	RJC 464 3035/68	
C611	CAPACITOR	RJC 464 3035/68	
C614	CAPACITOR	RJC 496 2047/1	
C615	CAPACITOR	See revision change table	Verify SIM function

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Pos	**Designation**	**Product nuber**	**Note**
C616	CAPACITOR	See revision change table	Verify flash function
C623	CAPACITOR	See revision change table	Verify SIM function
C625	CAPACITOR	See revision change table	
C626	CAPACITOR	RJC 464 3035/68	Verify SIM function
C627	CAPACITOR	RJC 463 3022/22	Verify SIM function
C628	CAPACITOR	RJC 463 3022/22	Verify SIM function
C629	CAPACITOR	See revision change table	Verify SIM function
C630	CAPACITOR	RJC 463 3022/22	Verify SIM function
C631-C632	Not mounted	Not mounted	
C633	CAPACITOR	RJC 464 3035/68	Verify display function
C634	Not mounted	Not mounted	
C635	CAPACITOR	RJC 464 3035/68	Verify SIM function
C636	CAPACITOR	RJC 463 3023/15	Verify display function
C637	CAPACITOR	RJC 463 3022/33	
C638	CAPACITOR	RJC 463 3022/33	
C639	Not mounted	Not mounted	
C642	CAPACITOR	RJC 464 3035/68	
C643	CAPACITOR	See revision change table	
C644	CAPACITOR	See revision change table	
C645-C646	Not mounted	Not mounted	
C647	CAPACITOR	See revision change table	
C648	Not mounted	Not mounted	
C650	CAPACITOR	RJC 463 3022/33	Verify handsfree earphone function
C651	CAPACITOR	RJC 463 3022/33	Verify handsfree mic function
C652	CAPACITOR	See revision change table	
C656	Not mounted	Not mounted	
C657	CAPACITOR	See revision change table	
C658-C659	Not mounted	Not mounted	
C660	CAPACITOR	RJC 463 3022/33	Verify charging function
C661	Not mounted	Not mounted	
C662	CAPACITOR	See revision change table	Verify flash function
C663	CAPACITOR	RJC 464 3024/1	Verify handsfree mic function
C664	CAPACITOR	RJC 464 3025/1	Verify handsfree earphone function
C665	CAPACITOR	See revision change table	
C666	CAPACITOR	See revision change table	

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Pos	**Designation**	**Product nuber**	**Note**
C667	CAPACITOR	RJC 464 3025/1	Verify charging function
C668	CAPACITOR	RJC 464 3035/68	Verify display function
C669-C672	Not mounted	Not mounted	
C674	Not mounted	Not mounted	
C677-C679	Not mounted	Not mounted	
C680	CAPACITOR	RJC 464 3023/33	
C681	Not mounted	Not mounted	
C682	CAPACITOR	RJC 463 3022/33	
C683	CAPACITOR	RJC 463 3022/33	
C692	CAPACITOR	RJC 464 3035/68	
C701	CAPACITOR	See revision change table	
C707	CAPACITOR	RJE 599 2107/47A	Verify SIM function
C708	CAPACITOR	RJC 464 3036/1	Verify SIM function
C709	CAPACITOR	RJC 464 3036/1	Verify SIM function
C710	CAPACITOR	RJC 464 3035/68	
C711	CAPACITOR	See revision change table	
C716	CAPACITOR	RJC 464 3047/1	Verify SIM function
C730	CAPACITOR	See revision change table	
C802-C808	CAPACITOR	See revision change table	
C810	CAPACITOR	RJC 464 3035/33	Verify handsfree mic function
C812	CAPACITOR	RJC 464 3035/68	Verify handsfree mic function
C813	CAPACITOR	RJE 599 2107/15	Verify handsfree earphone function
C814	CAPACITOR	RJE 599 2107/47A	Verify mic function
C815	CAPACITOR	RJC 463 3022/33	Verify mic function
C816	CAPACITOR	RJC 463 3022/33	Verify mic function
C817	CAPACITOR	RJC 463 3022/33	Verify handsfree mic function
C818	CAPACITOR	RJC 464 3035/68	Verify mic function
C819	CAPACITOR	RJC 464 3035/68	Verify mic function
C820	CAPACITOR	RJC 463 3022/33	Verify mic function
C824	CAPACITOR	RJC 464 3025/1	Verify display function
C826	CAPACITOR	RJA 532 4055/12	
C828	Not mounted	Not mounted	
C829	CAPACITOR	RJC 463 3022/33	Verify mic function
C830	CAPACITOR	RJC 463 3022/33	Verify mic function
C833	CAPACITOR	RJC 464 3035/68	
C835	CAPACITOR	RJE 599 2107/47A	Verify handsfree mic function

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Pos	**Designation**	**Product nuber**	**Note**
C840	CAPACITOR	RJC 463 3022/33	Verify earphone function
C841	CAPACITOR	RJC 463 3022/33	Verify earphone function
C842	Not mounted	Not mounted	
C850	CAPACITOR	RJC 464 3035/68	Verify mic function
C851	CAPACITOR	RJC 464 3035/68	Verify mic function
C853	CAPACITOR	RJC 464 3035/68	
C854	Not mounted	Not mounted	
C900	CAPACITOR	RJE 599 1108/1W	
C902-C907	CAPACITOR	See revision change table	
C910	Not mounted	Not mounted	
D600	MICROCIRCUIT	See revision change table	
D610	MICROCIRCUIT	RYT 118 6061/1	
D620	MICROCIRCUIT	RYT 119 6047/1	
D900	FUNCTIONAL CIRCUIT	See revision change table	
E201	SHIELDING POT	SXA 120 1194/4	
F601	VARISTOR	See revision change table	Verify handsfree earphone function
F602	Not mounted	Not mounted	Verify charging function
F603	VARISTOR	See revision change table	Verify portable handsfree function
F604	VARISTOR	See revision change table	Verify vehicle handsfree function
F605	VARISTOR	See revision change table	Verify flash function
H600	BUZZER	KLJ 107 08/2	
H622	Not mounted	Not mounted	
H624	Not mounted	Not mounted	
H650	LIGHT EMITTING DIODE	RKZ 433 613/1	Verify red/green top indicator
H651-H654	LIGHT EMITTING DIODE	RKZ 433 641/4	Verify Illumination function
H655-H660	LIGHT EMITTING DIODE	RKZ 433 634/4	Verify Illumination function
J603	COMPONENT HOLDER	RNK 860 23/04	
J810	CONNECTOR2	SXA 120 1210	
L213	CHOKE	REG 704 4742/12T	
L220	INDUCTOR	REG 704 4731/56	
L230	INDUCTOR	REG 704 9542/22	

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Pos	**Designation**	**Product nuber**	**Note**
L250	CHOKE	REG 704 2153/15	
L251	CHOKE	REG 704 2153/15	
L252	INDUCTOR	REG 704 273/33	
L300	FILTER	REG 706 06/1	
L350	INDUCTOR	REG 704 274/22	
L351	FILTER	REG 706 06/1	
L400	CHOKE	REG 704 212/27	
L401	TRANSFORMER	REG 704 23/28	
L402	FILTER	REG 706 06/1	
L451	FILTER	REG 706 06/1	
L501	FILTER	REG 706 06/1	
L503	INDUCTOR	See revision change table	
L602-L606	INDUCTOR	See revision change table	
L607	Not mounted	Not mounted	
L608	INDUCTOR	See revision change table	
L626	INDUCTOR	See revision change table	
L854	INDUCTOR	See revision change table	
L910	INDUCTOR	See revision change table	
N350	MICROCIRCUIT	RYT 102 6054/1	
N450	MICROCIRCUIT	RYT 113 6072/2	
N701	MICROCIRCUIT	RYT 113 6095/1	
N702	MICROCIRCUIT	RYT 113 6095/1	
N705	MICROCIRCUIT	RYT 113 048/C	
R220	RESISTOR	REP 622 454/47	
R221	RESISTOR	REP 622 455/1	
R222	RESISTOR	REP 622 453/27	
R224	RESISTOR	REP 622 453/33	
R225	RESISTOR	REP 622 453/33	
R226	RESISTOR	REP 622 453/33	
R227	RESISTOR	REP 622 452/82	
R230	RESISTOR	REP 622 453/27	
R241	RESISTOR	REP 622 453/56	
R242	RESISTOR	REP 622 453/56	
R243	RESISTOR	See revision change table	
R250	RESISTOR	REP 622 653/68	
R301	RESISTOR	REP 622 454/22	
R316	RESISTOR	REP 622 453/27	

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Pos	Designation	Product nuber	Note
R317	RESISTOR	REP 622 452/56	
R351	RESISTOR	REP 622 452/1	
R352	RESISTOR	REP 622 452/1	
R356	RESISTOR	REP 622 455/12	
R357	RESISTOR	REP 622 455/22	
R358	RESISTOR	REP 622 455/22	
R359	RESISTOR	REP 622 452/47	
R400	RESISTOR	REP 622 452/47	
R401	RESISTOR	See revision change table	
R402	RESISTOR	REP 622 453/12	
R420	RESISTOR	REP 622 454/56	
R421	RESISTOR	REP 622 456/1	
R422	RESISTOR	REP 622 456/1	
R423	RESISTOR	REP 622 454/56	
R424	RESISTOR	REP 622 452/47	
R429	RESISTOR	See revision change table	
R450	Not mounted	Not mounted	
R451	THERMISTOR	See revision change table	
R452	RESISTOR	REP 622 456/1	
R453	RESISTOR	REP 622 454/27	
R454	RESISTOR	See revision change table	
R455	RESISTOR	REP 622 451/22	
R456	RESISTOR	REP 622 455/33	Verify charging function
R460	RESISTOR	REP 622 457/1	
R464	RESISTOR	REP 622 455/1	Verify charging function
R465	Not mounted	Not mounted	
R466	RESISTOR	REP 622 001/0	
R467	RESISTOR	REP 645 623/39	Verify charging function
R468	RESISTOR	REP 645 620/1	Verify charging function
R469	RESISTOR	REP 622 455/15	
R470	RESISTOR	REP 622 456/1	Verify charging function
R471	RESISTOR	REP 622 455/33	Verify charging function
R501	RESISTOR	REP 622 452/12	
R502	RESISTOR	REP 622 453/47	
R520	RESISTOR	See revision change table	
R521	RESISTOR	See revision change table	
R522	Not mounted	Not mounted	

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Pos	**Designation**	**Product nuber**	**Note**
R600	RESISTOR	REP 622 452/33	Verify SIM function
R601	RESISTOR	REP 622 454/1	Verify portable handsfree function
R602	RESISTOR	REP 622 453/47	Verify vehicle handsfree function
R604	RESISTOR	REP 622 455/22	Verify flash function
R605	RESISTOR	REP 622 454/1	Verify vehicle handsfree function
R606	RESISTOR	REP 622 001/0	
R607	RESISTOR	REP 622 454/1	Verify Illumination function
R608	RESISTOR	REP 622 454/15	Verify Illumination function
R609	Not mounted	Not mounted	
R610	RESISTOR	REP 622 452/27	Verify Illumination function
R611	RESISTOR	REP 622 452/47	Verify Illumination function
R612	RESISTOR	See revision change table	
R613	RESISTOR	REP 622 455/1	
R614	Not mounted	Not mounted	
R616	RESISTOR	REP 622 456/1	Verify display function
R617	RESISTOR	REP 622 455/15	Verify SIM function
R618	RESISTOR	REP 622 456/1	Verify SIM function
R619	RESISTOR	REP 622 454/22	
R620	RESISTOR	REP 622 454/22	
R621	RESISTOR	REP 622 455/1	
R622	RESISTOR	REP 622 454/1	Verify flash function
R623	RESISTOR	See revision change table	Verify SIM function
R625	RESISTOR	REP 622 453/47	Verify flash function
R627	RESISTOR	See revision change table	
R628	RESISTOR	REP 622 452/33	Verify SIM function
R629	RESISTOR	REP 622 456/1	
R630-R634	RESISTOR	REP 622 456/1	Verify keyboard function
R635	RESISTOR	REP 622 455/22	Verify vehicle handsfree function
R636	RESISTOR	REP 622 455/22	Verify portable handsfree function
R639	Not mounted	Not mounted	
R646	RESISTOR	REP 622 453/33	
R647	RESISTOR	REP 622 453/33	
R648	RESISTOR	REP 622 656/1	Verify display function
R650	RESISTOR	REP 622 456/1	Verify flash function
R651	RESISTOR	REP 622 454/1	

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Pos	**Designation**	**Product nuber**	**Note**
R652	RESISTOR	REP 622 451/47	
R653	RESISTOR	REP 624 652/1	
R662	RESISTOR	REP 622 001/0	Verify keyboard function
R663	RESISTOR	REP 622 001/0	Verify keyboard function
R664	RESISTOR	See revision change table	
R666	RESISTOR	See revision change table	
R674	RESISTOR	See revision change table	
R678	RESISTOR	REP 622 455/1	Verify display function
R679	RESISTOR	REP 622 455/1	Verify display function
R690	RESISTOR	REP 622 001/0	
R700	RESISTOR	REP 622 456/1	Verify On/Off-function
R701	RESISTOR	See revision change table	
R703	RESISTOR	REP 622 001/0	
R704	RESISTOR	REP 622 456/1	Verify SIM function
R707	RESISTOR	See revision change table	
R708	RESISTOR	See revision change table	Verify On/Off-function
R709	RESISTOR	See revision change table	
R716	RESISTOR	REP 622 451/47	Verify SIM function
R721	RESISTOR	REP 622 001/0	
R724	RESISTOR	REP 624 652/47	Verify vehicle handsfree function
R725	RESISTOR	REP 622 456/1	
R802	RESISTOR	REP 622 654/39	Verify handsfree mic function
R803	RESISTOR	REP 622 653/1	Verify handsfree earphone function
R804	RESISTOR	REP 622 456/1	Verify handsfree earphone function
R805	RESISTOR	REP 622 655/15	Verify handsfree mic function
R807	RESISTOR	REP 622 656/1	Verify display function
R812	RESISTOR	REP 622 654/15	Verify mic function
R813	Not mounted	Not mounted	
R814	RESISTOR	REP 622 453/47	Verify mic function
R815	RESISTOR	REP 622 656/1	
R817	RESISTOR	See revision change table	Verify mic function
R818	RESISTOR	REP 622 455/22	Verify mic function
R819	RESISTOR	See revision change table	Verify mic function
R820	RESISTOR	REP 622 654/15	Verify mic function
R822	RESISTOR	REP 622 456/1	

			GA628
Pos	**Designation**	**Product nuber**	**Note**
R823	RESISTOR	REP 622 456/1	
R825	RESISTOR	REP 622 654/33	Verify handsfree mic function
R830	RESISTOR	REP 622 453/47	Verify handsfree mic function
R831	RESISTOR	See revision change table	
R833	Not mounted	Not mounted	
R834	RESISTOR	See revision change table	
R900-R905	RESISTOR	REP 622 455/1	
R906	Not mounted	Not mounted	
R907	RESISTOR	REP 622 456/1	
R908	RESISTOR	REP 622 456/1	
R909	RESISTOR	REP 622 456/1	
R910	Not mounted	Not mounted	
U201	TRANSFORMER	REG 704 109/1	
V220	TRANSISTOR	RYN 121 1606/1	
V300	TRANSISTOR	RYN 901 603/1	
V301	TRANSISTOR	RYN 120 629/2	
V302	TRANSISTOR	RYN 121 6069/1	
V350	TRANSISTOR	RYN 121 6069/1	
V351	TRANSISTOR	RYN 120 629/2	
V400	TRANSISTOR	RYN 121 6070/1	
V401	TRANSISTOR	RYN 121 6070/1	
V402	DIODE	RKZ 323 650/1	
V403	DIODE	RKZ 323 650/1	
V404	DIODE	See revision change table	
V405	DIODE	See revision change table	
V450	TRANSISTOR	RYN 120 629/2	
V451	TRANSISTOR	RYN 120 629/2	
V452	TRANSISTOR	RYN 120 629/2	
V453	TRANSISTOR	RYN 122 654/1	Verify charging function
V454	TRANSISTOR	RYN 121 6069/1	
V502	Not mounted	Not mounted	
V605	DIODE	RKZ 123 647/1	
V606	TRANSISTOR	RYN 121 6086/1	
V607	TRANSISTOR	RYN 121 6069/1	Verify flash function
V609	DIODE	See revision change table	Verify SIM function
V613	TRANSISTOR	RYN 121 6086/1	Verify Illumination function
V614	TRANSISTOR	RYN 121 6086/1	Verify Illumination function

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Pos	**Designation**	**Product nuber**	**Note**
V615	DIODE	RKZ 123 646/1	Verify display function
V700	TRANSISTOR	RYN 122 625/1	Verify SIM function
V701	TRANSISTOR	RYN 121 6069/1	Verify On/Off-function
V702	DIODE	RKZ 123 647/1	Verify On/Off-function
V704	TRANSISTOR	RYN 120 647/1	Verify On/Off-function
V705	TRANSISTOR	RYN 120 647/1	Verify SIM function
V706	TRANSISTOR	RYN 121 6086/1	
V708	TRANSISTOR	See revision change table	
V709	TRANSISTOR	See revision change table	
V805	DIODE	RKZ 123 646/2	Verify mic function
V806	DIODE	See revision change table	
X401	CONTACT HOUS-ING	SXA 120 981	
Z200	FILTER	RTN 201 789/01	
Z201	SAW-FILTER	RTN 202 780/01	
Z400	FILTER	RTN 202 799/01	
Z500	FILTER	RTN 202 743/01	
Z501	FILTER	RTN 202 743/02	
Z502	FILTER	RTN 202 743/03	

11.4.1 Revision change tables GA628

Revision change table for 2/ROA 117 3308/1 2/ROA 117 3308/2

		2/ROA 117 3308/1
Pos	Revisions	Product number
C112	Up to R2A	RJC 463 3022/33
C112	R2B and higher	RJC 464 3024/1
C213	Up to R2A	RJC 463 3022/33
C213	R2B and higher	RJC 463 3021/47
C214	Up to R2A	RJC 463 3022/33
C214	R2B and higher	RJC 463 3021/47
C407	Up to R1D	Not mounted
C407	R2A and higher	RJC 463 3021/56
C408	Up to R1D	Not mounted
C408	R2A and higher	RJC 463 3021/27
C409	Up to R1D	Not mounted
C409	R2A and higher	RJC 463 3021/39
C422	Up to R1D	RJC 463 3021/15
C422	R2A and higher	RJC 463 3020/82
C429	All revisions	Not mounted
C430	All revisions	Not mounted
C457	Up to R1D	RJE 599 1167/33
C457	R2A and higher	RJE 599 1107/47
C460	R1A	RJC 464 3023/56
C460	R1B and higher	RJC 464 3023/68
C461	R1A	RJC 464 3023/47
C461	R1B and higher	RJC 464 3023/56
C510	Up to R3A	RJC 464 3023/47
C510	R3B	Not mounted
C602	All revisions	RJC 464 3035/68
C603	All revisions	RJC 464 3035/68
C604	All revisions	RJC 464 3035/68
C605	All revisions	RJC 464 3035/68
C606	All revisions	RJC 464 3035/68
C608	All revisions	RJC 464 3035/68
C609	All revisions	RJC 464 3035/68
C615	All revisions	Not mounted

		2/ROA 117 3308/2
Pos	Revisions	Product number
C112	All revisions	RJC 464 3024/1
C213	All revisions	RJC 463 3021/47
C214	All revisions	RJC 463 3021/47
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	All revisions	Not mounted
C430	All revisions	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	Up to R3A	Not mounted
C510	R3B	RJC 464 3023/47
C602	All revisions	RJC 464 3035/68
C603	All revisions	RJC 464 3035/68
C604	All revisions	RJC 464 3035/68
C605	All revisions	RJC 464 3035/68
C606	All revisions	RJC 464 3035/68
C608	All revisions	RJC 464 3035/68
C609	All revisions	RJC 464 3035/68
C615	All revisions	Not mounted

		2/ROA 117 3308/1
Pos	Revisions	Product number
C616	Up to R2B	RJC 464 3035/68
C616	R3A and higher	RJC 496 2047/1
C623	All revisions	Not mounted
C625	All revisions	Not mounted
C629	All revisions	RJC 463 3022/22
C643	All revisions	Not mounted
C644	All revisions	Not mounted
C647	All revisions	Not mounted
C652	All revisions	RJC 463 3022/33
C657	All revisions	RJC 463 3022/33
C657	All revisions	RJC 463 3022/33
C662	Up to R2B	Not mounted
C662	R3A and higher	RJC 496 2047/1
C665	All revisions	RJC 464 3035/68
C666	All revisions	Not mounted
C701	All revisions	Not mounted
C711	All revisions	RJC 464 3024/12
C730	All revisions	RJC 464 3047/1
C802	All revisions	RJC 464 3035/68
C803	All revisions	RJC 464 3035/68
C804	All revisions	RJC 464 3035/68
C805	All revisions	RJC 464 3035/68
C806	All revisions	RJC 464 3035/68
C807	All revisions	RJC 464 3035/68
C808	All revisions	Not mounted
C902	All revisions	RJC 464 3035/68
C903	All revisions	RJC 464 3035/68
C904	All revisions	RJC 464 3035/68
C905	All revisions	RJC 464 3035/68
C906	All revisions	RJC 464 3035/68
C907	All revisions	RJC 464 3035/68
D600	Other than R1D	ROP 101 678/2C R2A
D600	R1D	ROP 101 677/2C R1D
D900	All revisions	RYS 105 625/2C R4A
F601	Up to R1D	Not mounted
F601	R2A and higher	REY 203 08/1
F603	Up to R2B	Not mounted

		2/ROA 117 3308/2
Pos	Revisions	Product number
C616	Up to R2B	RJC 464 3035/68
C616	R3A and higher	RJC 496 2047/1
C623	All revisions	Not mounted
C625	All revisions	Not mounted
C629	All revisions	RJC 463 3022/22
C643	All revisions	Not mounted
C644	All revisions	Not mounted
C647	All revisions	Not mounted
C652	All revisions	RJC 463 3022/33
C657	All revisions	Not mounted
C662	R2B	Not mounted
C662	R3A and higher	RJC 496 2047/1
C665	All revisions	RJC 464 3035/68
C666	All revisions	Not mounted
C701	All revisions	Not mounted
C711	All revisions	RJC 464 3024/12
C730	All revisions	RJC 464 3047/1
C802	All revisions	RJC 464 3035/68
C803	All revisions	RJC 464 3035/68
C804	All revisions	RJC 464 3035/68
C805	All revisions	RJC 464 3035/68
C806	All revisions	RJC 464 3035/68
C807	All revisions	RJC 464 3035/68
C808	All revisions	Not mounted
C902	All revisions	RJC 464 3035/68
C903	All revisions	RJC 464 3035/68
C904	All revisions	RJC 464 3035/68
C905	All revisions	RJC 464 3035/68
C906	All revisions	RJC 464 3035/68
C907	All revisions	RJC 464 3035/68
D600	All revisions	ROP 101 677/2C R1D
D900	All revisions	RYS 105 625/2C R4A
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1

		2/ROA 117 3308/1
Pos	**Revisions**	**Product number**
F603	R3A and higher	Rey 203 08/1
F604	Up to R2B	Not mounted
F604	R3A and higher	REY 203 08/1
F605	Up to R2B	Not mounted
F605	R3A and higher	Rey 203 08/1
L503	R1A	REG 704 274/22
L503	R1B and higher	REG 704 274/27
L602	All revisions	Not mounted
L603	All revisions	Not mounted
L604	All revisions	Not mounted
L605	All revisions	Not mounted
L606	All revisions	Not mounted
L608	All revisions	Not mounted
L626	All revisions	Not mounted
L854	All revisions	Not mounted
L910	All revisions	Not mounted
R243	Up to R3A	REP 622 453/22
R243	R3B and higher	REP 622 453/18
R401	Up to R3A	REP 622 453/12
R401	R3B and higher	REP 622 453/22
R429	All revisions	Not mounted
R451	Up to R3A	REZ 401 055/1
R451	R3B and higher	REZ 401 0054/47
R454	Up to R1D	REP 622 001/0
R454	R2A and higher	Not mounted
R520	Up to R3A	REP 622 001/0
R520	R3B and higher	Not mounted
R521	Up to R3A	Not mounted
R521	R3B and higher	REP 622 455/18
R612	All revisions	REP 622 001/0
R623	Up to R2B	Not mounted
R623	R3A and higher	REP 622 001/0
R627	All revisions	REP 622 001/0
R664	All revisions	REP 622 001/0
R666	All revisions	REP 622 001/0
R674	All revisions	Not mounted
R701	All revisions	Not mounted

		2/ROA 117 3308/2
Pos	**Revisions**	**Product number**
F604	R2B	Not mounted
F604	R3A and higher	REY 203 08/1
F605	R2B	Not mounted
F605	R3A and higher	REY 203 08/1
L503	R1A	REG 704 274/22
L503	R1B and higher	REG 704 274/27
L602	All revisions	Not mounted
L603	All revisions	Not mounted
L604	All revisions	Not mounted
L605	All revisions	Not mounted
L606	All revisions	Not mounted
L608	All revisions	Not mounted
L626	All revisions	Not mounted
L854	All revisions	Not mounted
L910	All revisions	Not mounted
R243	Up to R3A	REP 622 453/22
R243	R3B	REP 622 453/18
R401	Up to R3A	REP 622 453/12
R401	R3B	REP 622 453/22
R429	All revisions	Not mounted
R451	Up to R3A	REZ 401 055/1
R451	R3B	REZ 401 0054/47
R454	All revisions	Not mounted
R520	Up to R3A	REP 622 001/0
R520	R3B	Not mounted
R521	Up to R3A	Not mounted
R521	R3B	REP 622 455/18
R612	All revisions	REP 622 001/0
R623	R2B	Not mounted
R623	R3A and higher	REP 622 001/0
R627	All revisions	REP 622 001/0
R664	All revisions	REP 622 001/0
R666	All revisions	REP 622 001/0
R674	All revisions	Not mounted
R701	All revisions	Not mounted

		2/ROA 117 3308/1
Pos	**Revisions**	**Product number**
R703	All revisions	REP 622 001/0
R707	All revisions	REP 622 001/0
R708	All revisions	REP 622 456/1
R709	All revisions	REP 622 454/47
R817	Up to R2B	Not mounted
R817	R3A and higher	REP 622 454/1
R819	Up to R2B	Not mounted
R819	R3A and higher	REP 622 454/1
R831	Up to R3A	REP 622 655/1
R831	R3B and higher	REP 622 654/47
R834	All revisions	REP 622 455/1
V404	All revisions	RKZ 323 650/1
V405	All revisions	RKZ 323 650/1
V609	Up to R1D	Not mounted
V609	R2A and higher	RKZ 323 673/1
V708	All revisions	RYN 121 6069/1
V709	All revisions	RYN 121 6069/1
V806	Up to R1D	RKZ 123 646/2
V806	R2A and higher	Not mounted
Z200	Up to R2A	RTN 201 782/01
Z200	R2B and higher	RTN 201 789/01

		2/ROA 117 3308/2
Pos	**Revisions**	**Product number**
R703	All revisions	REP 622 001/0
R707	All revisions	REP 622 001/0
R708	All revisions	REP 622 456/1
R709	All revisions	REP 622 454/47
R817	R2B	Not mounted
R817	R3A and higher	REP 622 454/1
R819	R2B	Not mounted
R819	R3A and higher	REP 622 454/1
R831	Up to R3A	REP 622 655/1
R831	R3B	REP 622 654/47
R834	All revisions	REP 622 455/1
V404	All revisions	Not mounted
V405	All revisions	Not mounted
V609	All revisions	RKZ 323 673/1
V708	All revisions	RYN 121 6069/1
V709	All revisions	RYN 121 6069/1
V806	All revisions	Not mounted
Z200	All revisions	RTN 201 789/01

Revision change table for 2/ROA 117 3308/3 2/ROA 117 3308/4

	2/ROA 117 3308/3	
Pos	Revisions	Product number
C112	All revisions	RJC 464 3024/1
C213	All revisions	RJC 463 3021/47
C214	All revisions	RJC 463 3021/47
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	All revisions	Not mounted
C430	All revisions	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	R3A	RJC 464 3023/47
C510	R3B	Not mounted
C602	All revisions	RJC 464 3035/68
C603	All revisions	RJC 464 3035/68
C604	All revisions	RJC 464 3035/68
C605	All revisions	RJC 464 3035/68
C606	All revisions	RJC 464 3035/68
C608	All revisions	RJC 464 3035/68
C609	All revisions	RJC 464 3035/68
C615	All revisions	Not mounted
C616	All revisions	RJC 496 2047/1
C623	All revisions	Not mounted

	2/ROA 117 3308/4	
Pos	Revisions	Product number
C112	All revisions	RJC 464 3024/1
C213	All revisions	RJC 463 3021/47
C214	All revisions	RJC 463 3021/47
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	R5A	RJC 463 3022/33
C429	Other than R5A	Not mounted
C430	R5A	RJC 496 2367/47
C430	Other than R5A	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	R3A	RJC 464 3023/47
C510	R3B and higher	Not mounted
C602	Up to R3B	RJC 464 3035/68
C602	R4A and higher	RJC 464 3025/1
C603	Up to R3B	RJC 464 3035/68
C603	R4A and higher	RJC 464 3025/1
C604	Up to R3B	RJC 464 3035/68
C604	R4A and higher	RJC 464 3025/1
C605	Up to R3B	RJC 464 3035/68
C605	R4A and higher	RJC 464 3025/1
C606	Up to R3B	RJC 464 3035/68
C606	R4A and higher	RJC 464 3025/1
C608	Up to R3B	RJC 464 3035/68
C608	R4A and higher	RJC 464 3025/1
C609	Up to R3B	RJC 464 3035/68
C609	R4A and higher	RJC 464 3025/1
C615	Up to R3B	Not mounted
C615	R4A and higher	RJC 464 3035/68
C616	All revisions	RJC 496 2047/1
C623	All revisions	RJC 464 3025/1

		2/ROA 117 3308/3
Pos	**Revisions**	**Product number**
C625	All revisions	Not mounted
C629	All revisions	RJC 463 3022/22
C643	All revisions	Not mounted
C644	All revisions	Not mounted
C647	All revisions	Not mounted
C652	All revisions	RJC 463 3022/33
C657	All revisions	Not mounted
C662	All revisions	RJC 496 2047/1
C665	All revisions	RJC 464 3035/68
C666	All revisions	Not mounted
C701	All revisions	Not mounted
C711	All revisions	RJC 464 3024/12
C730	All revisions	RJC 464 3047/1
C802	All revisions	RJC 464 3035/68
C803	All revisions	RJC 464 3035/68
C804	All revisions	RJC 464 3035/68
C805	All revisions	RJC 464 3035/68
C806	All revisions	RJC 464 3035/68
C807	All revisions	RJC 464 3035/68
C808	All revisions	Not mounted

		2/ROA 117 3308/4
Pos	**Revisions**	**Product number**
C625	Up to R3B	Not mounted
C625	R4A and higher	RJC 463 3022/22
C629	Up to R3B	RJC 463 3022/22
C629	R4A and higher	Not mounted
C643	Up to R3B	Not mounted
C643	R4A and higher	RJC 464 3025/1
C644	Up to R3B	Not mounted
C644	R4A and higher	RJC 464 3025/1
C647	Up to R3B	Not mounted
C647	R4A and higher	RJC 464 3025/1
C652	Up to R3B	RJC 463 3022/33
C652	R4A and higher	Not mounted
C657	All revisions	RJC 463 3022/33
C662	All revisions	RJC 496 2047/1
C665	Up to R3B	RJC 464 3035/68
C665	R4A and higher	Not mounted
C666	All revisions	RJC 464 3025/1
C701	Up to R3B	Not mounted
C701	R4A and higher	RJC 464 3025/1
C711	Up to R3B	RJC 464 3024/12
C711	R4A and higher	Not mounted
C730	Up to R3B	RJC 464 3047/1
C730	R4A and higher	Not mounted
C802	Up to R3B	RJC 464 3035/68
C802	R4A and higher	RJC 464 3025/1
C803	Up to R3B	RJC 464 3035/68
C803	R4A and higher	RJC 464 3025/1
C804	Up to R3B	RJC 464 3035/68
C804	R4A and higher	RJC 464 3025/1
C805	Up to R3B	RJC 464 3035/68
C805	R4A and higher	RJC 464 3025/1
C806	Up to R3B	RJC 464 3035/68
C806	R4A and higher	RJC 464 3025/1
C807	Up to R3B	RJC 464 3035/68
C807	R4A and higher	RJC 464 3025/1
C808	Up to R3B	Not mounted
C808	R4A and higher	RJC 464 3025/1

		2/ROA 117 3308/3
Pos	**Revisions**	**Product number**
C902	All revisions	RJC 464 3035/68
C903	All revisions	RJC 464 3035/68
C904	All revisions	RJC 464 3035/68
C905	All revisions	RJC 464 3035/68
C906	All revisions	RJC 464 3035/68
C907	All revisions	RJC 464 3035/68
D600	All revisions	ROP 101 677/2C R1D
D900	All revisions	RYS 105 625/2C R4A
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1
F604	All revisions	REY 203 08/1
F605	All revisions	REY 203 08/1
L503	All revisions	REG 704 274/27
L602	All revisions	Not mounted
L603	All revisions	Not mounted
L604	All revisions	Not mounted
L605	All revisions	Not mounted
L606	All revisions	Not mounted
L608	All revisions	Not mounted
L626	All revisions	Not mounted
L854	All revisions	Not mounted
L910	All revisions	Not mounted

		2/ROA 117 3308/4
Pos	**Revisions**	**Product number**
C902	Up to R3B	RJC 464 3035/68
C902	R4A and higher	RJC 464 3025/1
C903	Up to R3B	RJC 464 3035/68
C903	R4A and higher	RJC 464 3025/1
C904	Up to R3B	RJC 464 3035/68
C904	R4A and higher	RJC 464 3025/1
C905	Up to R3B	RJC 464 3035/68
C905	R4A and higher	RJC 464 3025/1
C906	Up to R3B	RJC 464 3035/68
C906	R4A and higher	RJC 464 3025/1
C907	Up to R3B	RJC 464 3035/68
C907	R4A and higher	RJC 464 3025/1
D600	All revisions	ROP 101 677/2C R1D
D900	All revisions	RYS 105 627/C R1A
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1
F604	All revisions	REY 203 08/1
F605	All revisions	REY 203 08/1
L503	All revisions	REG 704 274/27
L602	Up to R3B	Not mounted
L602	R4A and higher	REG 706 18/1
L603	Up to R3B	Not mounted
L603	R4A and higher	REG 706 18/1
L604	Up to R3B	Not mounted
L604	R4A and higher	REG 706 18/1
L605	Up to R3B	Not mounted
L605	R4A and higher	REG 706 18/1
L606	Up to R3B	Not mounted
L606	R4A and higher	REG 706 18/1
L608	Up to R3B	Not mounted
L608	R4A and higher	REG 706 18/1
L626	Up to R3B	Not mounted
L626	R4A and higher	REG 706 18/1
L854	Up to R3B	Not mounted
L854	R4A and higher	REG 706 18/1
L910	Up to R3B	Not mounted
L910	R4A and higher	REG 706 18/1

		2/ROA 117 3308/3
Pos	**Revisions**	**Product number**
R243	R3A	REP 622 453/22
R243	R3B	REP 622 453/18
R401	R3A	REP 622 453/12
R401	R3B	REP 622 453/22
R429	All revisions	Not mounted
R451	R3A	REZ 401 055/1
R451	R3B	REZ 401 0054/47
R454	All revisions	Not mounted
R520	R3A	REP 622 001/0
R520	R3B	Not mounted
R521	R3A	Not mounted
R521	R3B	REP 622 455/18
R612	All revisions	REP 622 001/0
R623	All revisions	REP 622 001/0
R627	All revisions	REP 622 001/0
R664	All revisions	REP 622 001/0
R666	All revisions	REP 622 001/0
R674	All revisions	Not mounted
R701	All revisions	Not mounted
R703	All revisions	REP 622 001/0
R707	All revisions	REP 622 001/0
R708	All revisions	REP 622 456/1
R709	All revisions	REP 622 454/47
R817	All revisions	REP 622 454/1
R819	All revisions	REP 622 454/1
R831	R3A	REP 622 655/1
R831	R3B	REP 622 654/47

		2/ROA 117 3308/4
Pos	**Revisions**	**Product number**
R243	R3A	REP 622 453/22
R243	R3B and higher	REP 622 453/18
R401	R3A	REP 622 453/12
R401	R3B and higher	REP 622 453/22
R429	Up to R5B	Not mounted
R429	R5C	REP 622 001/0
R451	All revisions	REZ 401 0054/47
R454	All revisions	Not mounted
R520	R3A	REP 622 001/0
R520	R3B and higher	Not mounted
R521	R3A	Not mounted
R521	R3B and higher	REP 622 455/18
R612	Up to R3B	REP 622 001/0
R612	R4A and higher	Not mounted
R623	All revisions	REP 622 001/0
R627	Up to R3B	REP 622 001/0
R627	R4A and higher	Not mounted
R664	Up to R3B	REP 622 001/0
R664	R4A and higher	Not mounted
R666	Up to R3B	REP 622 001/0
R666	R4A and higher	Not mounted
R674	Up to R3B	Not mounted
R674	R4A and higher	REP 622 001/0
R701	Up to R5A	Not mounted
R701	R5B and higher	REP 622 001/0
R703	Up to R3B	REP 622 001/0
R703	R4A and higher	Not mounted
R707	Up to R3B	REP 622 001/0
R707	R4A and higher	Not mounted
R708	Up to R3B	REP 622 456/1
R708	R4A and higher	REP 622 654/33
R709	Up to R3B	REP 622 454/47
R709	R4A and higher	Not mounted
R817	All revisions	REP 622 454/1
R819	All revisions	REP 622 454/1
R831	All revisions	REP 622 654/47
R834	Up to R3B	REP 622 455/1

		2/ROA 117 3308/3
Pos	**Revisions**	**Product number**
R834	All revisions	REP 622 455/1
V404	All revisions	Not mounted
V405	All revisions	Not mounted
V609	All revisions	RKZ 323 673/1
V708	All revisions	RYN 121 6069/1
V709	All revisions	RYN 121 6069/1
V806	All revisions	Not mounted
Z200	All revisions	RTN 201 789/01

		2/ROA 117 3308/4
Pos	**Revisions**	**Product number**
R834	R4A and higher	Not mounted
V404	R5A, R5B	RKZ 323 650/1
V404	Other than R5A, R5B	Not mounted
V405	R5A, R5B	RKZ 323 650/1
V405	Other than R5A, R5B	Not mounted
V609	All revisions	RKZ 323 673/1
V708	Up to R3B	RYN 121 6069/1
V708	R4A and higher	Not mounted
V709	Up to R3B	RYN 121 6069/1
V709	R4A and higher	Not mounted
V806	All revisions	Not mounted
Z200	All revisions	RTN 201 789/01

Revision change table for 2/ROA 117 3308/5 2/ROA 117 3308/7

		2/ROA 117 3308/5
Pos	Revisions	Product number
C112	All revisions	RJC 464 3024/1
C213	All revisions	RJC 463 3021/47
C214	All revisions	RJC 463 3021/47
C407	All revisions	RJC 463 3021/56
C408	All revisions	RJC 463 3021/27
C409	All revisions	RJC 463 3021/39
C422	All revisions	RJC 463 3020/82
C429	R5A	RJC 463 3022/33
C429	Other than R5A	Not mounted
C430	R5A	RJC 496 2367/47
C430	Other than R5A	Not mounted
C457	All revisions	RJE 599 1107/47
C460	All revisions	RJC 464 3023/68
C461	All revisions	RJC 464 3023/56
C510	All revisions	Not mounted
C602	All revisions	RJC 464 3025/1
C603	All revisions	RJC 464 3025/1
C604	All revisions	RJC 464 3025/1
C605	All revisions	RJC 464 3025/1
C606	All revisions	RJC 464 3025/1
C608	All revisions	RJC 464 3025/1
C609	All revisions	RJC 464 3025/1
C615	All revisions	RJC 464 3035/68
C616	All revisions	RJC 496 2047/1
C623	All revisions	RJC 464 3025/1
C625	All revisions	RJC 463 3022/22
C629	All revisions	Not mounted
C643	All revisions	RJC 464 3025/1
C644	All revisions	RJC 464 3025/1
C647	All revisions	RJC 464 3025/1
C652	All revisions	Not mounted
C657	All revisions	RJC 463 3022/33
C662	All revisions	RJC 496 2047/1
C665	All revisions	Not mounted

		2/ROA 117 3308/7
Pos	Revisions	Product number
C112	R3B	RJC 464 3024/1
C213	R3B	RJC 463 3021/47
C214	R3B	RJC 463 3021/47
C407	R3B	RJC 463 3021/56
C408	R3B	RJC 463 3021/27
C409	R3B	RJC 463 3021/39
C422	R3B	RJC 463 3020/82
C429	R3B	Not mounted
C430	R3B	Not mounted
C457	R3B	RJE 599 1107/47
C460	R3B	RJC 464 3023/68
C461	R3B	RJC 464 3023/56
C510	R3B	Not mounted
C602	R3B	RJC 464 3035/68
C603	R3B	RJC 464 3035/68
C604	R3B	RJC 464 3035/68
C605	R3B	RJC 464 3035/68
C606	R3B	RJC 464 3035/68
C608	R3B	RJC 464 3035/68
C609	R3B	RJC 464 3035/68
C615	R3B	Not mounted
C616	R3B	RJC 496 2047/1
C623	R3B	RJC 464 3025/1
C625	R3B	Not mounted
C629	R3B	RJC 463 3022/22
C643	R3B	Not mounted
C644	R3B	Not mounted
C647	R3B	Not mounted
C652	R3B	RJC 463 3022/33
C657	R3B	RJC 463 3022/33
C662	R3B	RJC 496 2047/1
C665	R3B	RJC 464 3035/68

		2/ROA 117 3308/5
Pos	**Revisions**	**Product number**
C666	All revisions	RJC 464 3025/1
C701	All revisions	RJC 464 3025/1
C711	All revisions	Not mounted
C730	All revisions	Not mounted
C802	All revisions	RJC 464 3025/1
C803	All revisions	RJC 464 3025/1
C804	All revisions	RJC 464 3025/1
C805	All revisions	RJC 464 3025/1
C806	All revisions	RJC 464 3025/1
C807	All revisions	RJC 464 3025/1
C808	All revisions	RJC 464 3025/1
C902	All revisions	RJC 464 3025/1
C903	All revisions	RJC 464 3025/1
C904	All revisions	RJC 464 3025/1
C905	All revisions	RJC 464 3025/1
C906	All revisions	RJC 464 3025/1
C907	All revisions	RJC 464 3025/1
D600	All revisions	ROP 101 678/2C R2A
D900	All revisions	RYS 105 627/C R1A
F601	All revisions	REY 203 08/1
F603	All revisions	REY 203 08/1
F604	All revisions	REY 203 08/1
F605	All revisions	REY 203 08/1
L503	All revisions	REG 704 274/27
L602	All revisions	REG 706 18/1
L603	All revisions	REG 706 18/1
L604	All revisions	REG 706 18/1
L605	All revisions	REG 706 18/1
L606	All revisions	REG 706 18/1
L608	All revisions	REG 706 18/1
L626	All revisions	REG 706 18/1
L854	All revisions	REG 706 18/1
L910	All revisions	REG 706 18/1
R243	All revisions	REP 622 453/12
R401	All revisions	REP 622 453/22
R429	Up to R5B	Not mounted
R429	R5C	REP 622 001/0

		2/ROA 117 3308/7
Pos	**Revisions**	**Product number**
C666	R3B	RJC 464 3025/1
C701	R3B	Not mounted
C711	R3B	RJC 464 3024/12
C730	R3B	RJC 464 3047/1
C802	R3B	RJC 464 3035/68
C803	R3B	RJC 464 3035/68
C804	R3B	RJC 464 3035/68
C805	R3B	RJC 464 3035/68
C806	R3B	RJC 464 3035/68
C807	R3B	RJC 464 3035/68
C808	R3B	Not mounted
C902	R3B	RJC 464 3035/68
C903	R3B	RJC 464 3035/68
C904	R3B	RJC 464 3035/68
C905	R3B	RJC 464 3035/68
C906	R3B	RJC 464 3035/68
C907	R3B	RJC 464 3035/68
D600	R3B	ROP 101 677/2C R1D
D900	R3B	RYS 105 627/C R1A
F601	R3B	REY 203 08/1
F603	R3B	REY 203 08/1
F604	R3B	REY 203 08/1
F605	R3B	REY 203 08/1
L503	R3B	REG 704 274/27
L602	R3B	Not mounted
L603	R3B	Not mounted
L604	R3B	Not mounted
L605	R3B	Not mounted
L606	R3B	Not mounted
L608	R3B	Not mounted
L626	R3B	Not mounted
L854	R3B	Not mounted
L910	R3B	Not mounted
R243	R3B	REP 622 453/18
R401	R3B	REP 622 453/22
R429	R3B	Not mounted

		2/ROA 117 3308/5
Pos	**Revisions**	**Product number**
R451	All revisions	REZ 401 0054/47
R454	Up to R1D	REP 622 001/0
R454	R2A and higher	Not mounted
R520	All revisions	Not mounted
R521	All revisions	REP 622 455/39
R612	All revisions	Not mounted
R623	All revisions	REP 622 001/0
R627	All revisions	Not mounted
R664	All revisions	Not mounted
R666	All revisions	Not mounted
R674	All revisions	REP 622 001/0
R701	Up to R5A	Not mounted
R701	R5B and higher	REP 622 001/0
R703	All revisions	Not mounted
R707	All revisions	Not mounted
R708	All revisions	REP 622 654/33
R709	All revisions	Not mounted
R817	All revisions	REP 622 454/1
R819	All revisions	REP 622 454/1
R831	All revisions	REP 622 654/47
R834	Up to R3B	REP 622 455/1
R834	R4A and higher	Not mounted
V404	R5A	RKZ 323 650/1
V404	Other than R5A	Not mounted
V405	R5A	RKZ 323 650/1
V405	Other than R5A	Not mounted
V609	All revisions	RKZ 323 673/1
V708	All revisions	Not mounted
V709	All revisions	Not mounted
V806	All revisions	Not mounted
Z200	All revisions	RTN 201 789/01

		2/ROA 117 3308/7
Pos	**Revisions**	**Product number**
R451	R3B	REZ 401 0054/47
R454	R3B	Not mounted
R520	R3B	Not mounted
R521	R3B	REP 622 455/18
R612	R3B	REP 622 001/0
R623	R3B	REP 622 001/0
R627	R3B	REP 622 001/0
R664	R3B	REP 622 001/0
R666	R3B	REP 622 001/0
R674	R3B	Not mounted
R701	R3B	Not mounted
R703	R3B	REP 622 001/0
R707	R3B	REP 622 001/0
R708	R3B	REP 622 456/1
R709	R3B	REP 622 454/47
R817	R3B	REP 622 454/1
R819	R3B	REP 622 454/1
R831	R3B	REP 622 654/47
R834	R3B	REP 622 455/1
V404	R3B	Not mounted
V405	R3B	Not mounted
V609	R3B	RKZ 323 673/1
V708	R3B	RYN 121 6069/1
V709	R3B	RYN 121 6069/1
V806	R3B	Not mounted
Z200	R3B	RTN 201 789/01